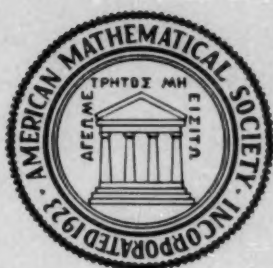


# Mathematical Reviews



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## Annual Index – 1985

## Subject Index 00 – 58

**Index of Mathematical Papers** Volume 17  
Published by the American Mathematical Society  
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# 1980 Mathematics Subject Classification (1985 Revision)

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## Annual Index – 1985

## Subject Index

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- Decker, Helms (with Stark, E. L.) Möbius-Bänder: ...und natürlich auch auf Briefmarken. [Möbius strips: ...and, of course, even on stamps] (Not in MR)
- Dyson, Freeman J. Unfashionable pursuits. 85c:01071
- Stark, E. L. See Decker, Helms, (Not in MR)
- Thompson, Robert C. Author vs. referee: a case history for middle level mathematicians. 85c:01072

## 01-XX HISTORY AND BIOGRAPHY [See also the classification number -03 in the other sections.]

- Men'shov, D. E. The first steps of N. N. Luzin's school. (Russian) (Not in MR)
- (Prabhakar, Tilak Raj) See Obituary: Prabhakar, Tilak Raj, (Not in MR)

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- Prabhakar, Tilak Raj Untimely demise of Dr. Tilak Raj Prabhakar. (Not in MR)

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- Blatter, Christian Über Kurven konstanter Breite. [On curves of constant breadth] (Not in MR)

## 01-00 Handbooks, dictionaries, and other reference works

- Kinowska, Małgorzata See Michalczyk, Barbara; et al., 85m:01001
- Michalczyk, Barbara (with Sadurska, Wanda; Kinowska, Małgorzata) Current bibliography of the history of science and technology. No. 49 (January-March 1983). (Polish) 85m:01001
- Sadurska, Wanda See Michalczyk, Barbara; et al., 85m:01001
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History of science and technology See Michalczyk, Barbara; et al., 85m:01001

## 01-01 Elementary exposition; textbooks

- Freudenthal, Hans Should a mathematics teacher know something about the history of mathematics? (Swedish. English summary) 85m:01002
- Kandulski, Maciej ★ Zarys historii matematyki [An outline of the history of mathematics]. (Polish) 85h:01001
- Mal'trov, L. E. Prime values of the polynomial  $x^2 + x + 41$ . (Russian) 85k:01001

- Meschkowski, Herbert ★ Problemgeschichte der Mathematik. I. (German) [Problem history of mathematics. I] 85k:01002

- (Morley, S. Arthur) See Freudenthal, Hans, 85m:01002

- Müller, Gerhard (with Schuppar, Berthold) Vom Schattenstab zur Sonnenuhr. I. [From shadow rod to sundial. I] (Not in MR)
- (with Schuppar, Berthold) Vom Schattenstab zur Sonnenuhr. II. [From the shadow rod to the sundial. II] (Not in MR)

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- Scriba, Christoph J. Die Rolle der Geschichte der Mathematik in der Ausbildung von Schülern und Lehrern. [The role of the history of mathematics in the education of students and teachers] 85a:01001

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- (Arnold, Wolfgang) See Biography: Outstanding mathematicians, 85c:01005
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- (Bottassini, Umberto) See Struik, Dirk J., 85i:01004
- (Euler, Leonhard) See Yakovlev, A. Ya., 85k:01051
- Mancini Proia, Lina (with Menghini, Marta) Conic sections in the sky and on the earth. 85m:01024
- Menghini, Marta See Mancini Proia, Lina, 85m:01024
- Rosnikoff, H. L. (with Wells, R. O., Jr.) ★ Mathematik im Wandel der Kulturen. (German) [Mathematics in civilization] 85i:01003
- (Sella, Virginio) See Struik, Dirk J., 85i:01004
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- (Wells, Rena Schwarse) See Rosnikoff, H. L., 85i:01003
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## 01-02 Advanced exposition (research surveys, monographs, etc.)

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- (Bottassini, Umberto) See Struik, Dirk J., 85i:01004
- (Sella, Virginio) See Struik, Dirk J., 85i:01004
- Struik, Dirk J. ★ Matematica: un profilo storico. (Italian) [A concise history of mathematics] 85i:01004

## 01-06 Proceedings, conferences, etc.

- (Dauben, Joseph W.) See History and philosophy of science: selected papers, 85g:01002
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- (Euler, Leonhard) See On the work of Leonhard Euler, 85g:01003
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#### Proceedings:

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(Lusin, N. N.) See Biography: Lusin, N. N. 85h:01029

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#### Anniversary:

Birth of Lusin, N. N. ★ Николай Николаевич Лузин. (Russian) [Nikolai Nikolaevich Lusin] 85h:01029

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- Anniversary:
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- (Ananias of Shirak) See Eganyan, A. M., **85b:01011**  
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- Schwarz, Steven Recursive automorphisms of recursive linear orderings. 85c:03018
- Selivanov, V. L. The structure of degrees of generalized index sets. (Russian) 85m:03031
- Shi, Nian Dong Creative pairs of subalgebras of recursively enumerable Boolean algebras. (Chinese) 85b:03078
- Sorbi, Andrea See Bernardi, Claudio, 85i:03148
- Tang, Adrian See Kamimura, Tsutomu, 85m:03030
- Watnick, Richard A generalization of Tennenbaum's theorem on effectively finite recursive linear orderings. 85i:03152
- Wiehagen, Rolf See Freivalds, Rūsiņš; et al. 85g:03065

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- Cai, Mao Hua A projection theorem for recursively enumerable fuzzy sets. (Chinese) 85d:03062
- Dobritsa, V. P. Some constructivizations of abelian groups. (Russian) 85d:20062
- Freivalds, Rūsiņš (with Kinber, E. B.; Wiehagen, Rolf) Connections between identifying functionals, standardizing operations, and computable numberings. 85i:03135
- Goncharov, S. S. Limit equivalent constructivizations. (Russian) 85d:03122
- Kinber, E. B. See Freivalds, Rūsiņš; et al. 85i:03135
- Kudalberginov, K. Zh. The number of constructive homogeneous models of a complete decidable theory. 85e:03075
- Metakides, George (with Nerode, Anil) The introduction of nonrecursive methods into mathematics. 85d:03121
- Morozov, A. S. Strong constructivizability of countable saturated Boolean algebras. (Russian) 85b:03052
- Nerode, Anil See Metakides, George, 85d:03121
- Schäfer, Gisela See Weihrauch, Klaus, 85f:68054
- Scott, Dana S. Lectures on a mathematical theory of computation. 85g:68043
- Streinu, Ileana Grammar directed Gödel numberings. 85b:68029
- Weihrauch, Klaus (with Schäfer, Gisela) Admissible representations of effective CPOs. 85f:68054
- Wiehagen, Rolf See Freivalds, Rūsiņš; et al. 85i:03135

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- Dekker, J. C. E. Isols and balanced block designs with  $\lambda = 1$ . 85e:03107
- Ellentuck, Erik Random isols. 85b:03079
- Heck, William S. Large families of incomparable  $A$ -isols. 85a:03057

## 03D55 Hierarchies

- Becker, Howard A technique for proving uniformity. 85e:03108
- Belyakin, N. V. A means of modeling the classical second-order arithmetic. (Russian) 85b:03046
- Ruohonen, Keijo On machine characterization of nonrecursive hierarchies. 85b:03047
- Selivanov, V. L. Index sets in the Kleene-Mostowski hierarchy. (Russian) 85b:03048
- Weißkamp, Galen Analytic sets having incomparable Kleene degrees. 85d:03091

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- Hodes, Harold T. More about uniform upper bounds on ideals of Turing degrees. 85e:03100
- Hrbáček, Karel Degrees of analytic sets. 85d:03086
- Kechris, Alexander S. Effective Ramsey theorems in the projective hierarchy. 85k:03031
- Lerman, Manuel ★ Degrees of unsolvability. 85b:03044
- Louveau, Alain Borel sets and the analytical hierarchy. 85j:03081

## 03D60 Recursion theory on ordinals, admissible sets, etc.

- Chong, C. T. Global and local admissibility. 85i:03153a  
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Hyperhypersimple supersets in admissible recursion theory. 85d:03092
- Di Paola, Robert A. The basic theory of partial  $\alpha$ -recursive operators. 85i:03154
- Yang, Dong Ping On the embedding of  $\alpha$ -recursive presentable lattices into the  $\alpha$ -recursive degrees below  $0'$ . 85m:03032

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- Cantini, Andrea Nonextensional theories of predicative classes over PA. 85m:03041
- Chong, C. T. Minimal  $\alpha$ -hyperdegrees. 85j:03078
- Friedman, Sy D. (with Shelah, Saharon) Tall  $\alpha$ -recursive structures. 85g:03057
- Odifreddi, Piergiorgio Forcing and reducibilities. III. Forcing in fragments of set theory. 85m:03034c
- Shelah, Saharon See Friedman, Sy D., 85g:03057
- Van de Wiele, Jacques Recursive dilators and generalized recursions. 85i:03184
- 03D65 Higher-type and set recursion theory
- Bosio, Alberto A note on topological and ordering properties and generalized recursiveness. (Italian. English summary) 85b:03080
- Chong, C. T. Minimal  $\alpha$ -hyperdegrees. 85j:03078
- Griffon, E. R. Some consequences of AD for Kleene recursion in  ${}^3E$ . 85k:03030  
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- Kirousis, Lefteris Miltiades A selection theorem. 85g:03066
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External and internal algorithms on the continuous functionals. 85g:03067  
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Characterizing the continuous functionals. 85d:03094  
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- Slaman, Theodore A. The extended plus-one hypothesis—a relative consistency result. 85b:03081
- Vogel, Helmut On a relationship between countable functionals and projective trees. 85g:03099
- Weihrauch, Klaus See Kreitz, Christoph, (85m:03006)
- Zeigmann, Thomas On the nonboundability of total effective operators. 85g:03070

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- Skordev, Dimit'ir G. An algebraic treatment of flow diagrams and its application to generalized recursion theory. 85f:68007

## 03D70 Inductive definability

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- Feferman, Solomon Monotone inductive definitions. 85b:03061
- Freivalds, Rūsiņš (with Kinber, E. B.; Wiehagen, Rolf) Inductive inference and computable one-one numberings. 85g:03065
- Kinber, E. B. See Freivalds, Rūsiņš; et al. 85g:03065
- Wiehagen, Rolf See Freivalds, Rūsiņš; et al. 85g:03065
- Yanagi, Mariko Definability problems in elementary topology. 85b:03109

## 03D75 Abstract and axiomatic recursion theory

- Bloom, Stephen L. Iterative and metric algebraic theories. 85b:03049
- Fitting, Melvin A generalization of elementary formal systems. 85g:03071
- Soikov, I. N. Computability in algebraic systems. (Russian) 85b:03082
- Zashev, I. A. Basic recursion theory in partially ordered models of some fragments of the combinatory logic. 85j:03077

## secondary classifications (03D75)

- Bloom, Stephen L. (with Thatcher, James; Wagner, Eric; Wright, Jesse) Recursion and iteration in continuous theories: the " $M$ -construction". 85j:68067  
All solutions of a system of recursion equations in infinite trees and other contraction theories. 85k:68056
- Rajkumar Dare, V. See Siromoney, Rani; et al. 85a:68109
- Siromoney, Rani (with Rajkumar Dare, V.; Subramanian, K. G.) Infinite arrays and infinite computations. 85a:68109
- Skandalis, Kostas Programmable real numbers and functions. 85m:68028
- Subramanian, K. G. See Siromoney, Rani; et al. 85a:68109
- Thatcher, James See Bloom, Stephen L.; et al. 85j:68067
- Wagner, Eric See Bloom, Stephen L.; et al. 85j:68067
- Wright, Jesse See Bloom, Stephen L.; et al. 85j:68067
- Zashev, I. A.  $\nabla$ -combinatory algebras and abstract Plotkin's models. (Not in MR)

## 03D80 Applications

- Anshel, Michael (with McAloon, Kenneth) Reducibilities among decision problems for HNN groups, vector addition systems and subsystems of Peano arithmetic. 85d:03096
- McAloon, Kenneth See Anshel, Michael, 85d:03096

## secondary classifications (03D80)

- Benson, David B. (with Guessarian, Irène) Iterative and recursive matrix theories. 85j:68066
- Bergstra, Jan A. (with Klop, Jan W.) Initial algebra specifications for parametrized data types. (German and Russian summaries) 85f:68068
- Blair, Howard A. The recursion-theoretic complexity of the semantics of predicate logic as a programming language. 85g:03060
- Burge, William H. ★ Методы рекурсивного программирования. (Russian) [Recursive programming techniques] 85b:68003
- Burr, S. A. Some undecidable problems involving the edge-coloring and vertex-coloring of graphs. 85k:05044
- Constable, Robert L. Constructive mathematics as a programming logic. I. Some principles of theory. 85f:68060
- Guessarian, Irène See Benson, David B., 85j:68066



- (Ivanenko, V. G.) See Burge, William H., 85b:08003  
 Klop, Jan W. See Bergstra, Jan A., 85f:08008  
 (Kulshabchev, Yu. P.) See Burge, William H., 85b:08003  
 Scott, Dana S. Lectures on a mathematical theory of computation. 85g:08043  
 Ursynszyn, Paweł A necessary and sufficient condition in order that a Herbrand interpretation be expressive relative to recursive programs. 85d:08047  
 Yasugi, Mariko Definability problems in elementary topology. 85b:03109  
 (Zahradin, S. P.) See Burge, William H., 85b:08003

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secondary classifications (03D90)

- Jin, Chang Ze Local  $N$ -compactness of fuzzy topological spaces. (Chinese) (Not in MR)  
 Velinov, Y. P. Polycategories and recursiveness. (See 85i:20006)

## 03Exx Set theory [See also 04-XX.]

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- Hrbáček, Karel (with Jech, Thomas J.) ★ Introduction to set theory. 85m:04001  
 Jech, Thomas J. See Hrbáček, Karel, 85m:04001  
 Kunen, Kenneth ★ Set theory. 85e:03003  
 Takeuti, Gaisi (with Zaring, Wilson M.) ★ Introduction to axiomatic set theory. 85b:03003  
 Zaring, Wilson M. See Takeuti, Gaisi, 85b:03003

## 03E05 Combinatorial set theory

- Balanda, Kevin P. Maximally almost disjoint families of representing sets. 85f:03041  
 Bartoszyński, Tamek Additivity of measure implies additivity of category. 85b:03083  
 Devlin, Keith J. Reduced powers of  $\aleph_2$ -trees. 85i:03150  
 Di Prisco, C. A. (with Marek, Wiktor) A filter on  $[\aleph]^{\aleph}$ . 85g:03072  
 Hanasawa, Masasumi On the product of Souslin trees. 85c:03019  
 Henle, J. M. (with Kanamori, Aki; Kleinberg, E. M.) Filters for square-bracket partition relations. 85e:03109  
 Jech, Thomas J. (with Prikry, Karel) Cofinality of the partial ordering of functions from  $\omega_1$  into  $\omega$  under eventual domination. 85b:03084  
 Kanamori, Aki Moras-level combinatorial principles. 85d:03097  
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- Abraham, Uri Aronszajn trees on  $\aleph_2$  and  $\aleph_3$ . 85d:03100  
 Aharoni, Ron (with Nash-Williams, C. St. J. A.; Shelah, Saharon) A general criterion for the existence of transversals. 85g:04001  
 Carlson, Tim (with Simpson, Stephen G.) A dual form of Ramsey's theorem. 85b:04002  
 Di Prisco, C. A. (with Marek, Wiktor) Some properties of stationary sets. 85h:04003  
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 Hart, K. P. The  $K_n$ -property in  $\omega_1$ -trees. 85h:04057  
 Huber, Martin Methods of set theory and the abundance of separable abelian  $p$ -groups. 85h:20059  
 Jech, Thomas J. More game-theoretic properties of Boolean algebras. 85j:03110  
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 Piotrowski, Adam On the  $\diamond$  principle. 85j:04004  
 Shelah, Saharon On universal graphs without instances of CH. 85b:03054  
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 Simpson, Stephen G. See Carlson, Tim, 85b:04002  
 Todorćević, S. On a conjecture of R. Rado. 85e:03117  
 Forcing positive partition relations. 85d:03102  
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 Velleman, Dan Simplified morasses. 85i:03163  
 Vojtáš, Peter Boolean games—classifying strategies and omitting cardinality assumptions. (See 85d:08027)  
 Watro, R. J. On partitioning the infinite subsets of large cardinals. 85f:03052  
 Wolfson, Kurt A Baire-type theorem for cardinals. 85i:04006  
 Handbook:  
 Set-theoretic topology ★ Handbook of set-theoretic topology. 85k:04001

## 03E10 Ordinal and cardinal numbers

- Häusser, Alexander F. Defining cardinal addition by  $\leq$ -formulas. 85e:03111

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- Acuña-Ortega, Ovidio Finite cardinals in an arbitrary topos. (Spanish) 85d:03126  
 Böchi, J. Richard (with Siekma, Dirk) The complete extensions of the monadic second order theory of countable ordinals. 85g:03058  
 (with Zolotarev, Charles) Deterministic automata and the monadic theory of ordinals  $< \omega_2$ . 85j:03006  
 Masseron, Marcel Runge and trees. 85e:03145  
 Nurtasin, A. T. An elementary classification and some properties of complete orders. (Russian) 85f:03037  
 Shelah, Saharon Better quasi-orders for uncountable cardinals. 85b:03085

- Siekma, Dirk See Böchi, J. Richard, 85g:03058  
 Spencer, Joel Large numbers and unprovable theorems. 85a:03073  
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 Hay, L. (with Miller, Douglas E.) A topological analog to the Rice-Shapiro index theorem. 85a:03058  
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 The jump inversion theorem for  $Q_{2n+1}$ -degrees. 85h:03050  
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- Becker, Howard A technique for proving uniformity. 85e:03108  
 Böchi, J. Richard State-strategies for games in  $F_{\aleph_1} \cap G_{\aleph_1}$ . 85j:03012  
 Censer, Douglas (with Mauldin, R. Daniel) On the Borel class of the derived set operator. (French summary) 85b:04058  
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 David, René  $\Delta_1^1$  reals. 85a:03060  
 Friedman, Harvey M. Unary Borel functions and second-order arithmetic. 85e:03144  
 Kanovei, V. G. The structure of constituents of  $\Pi_1^1$ -sets. (Russian) 85j:04002  
 See also Uspenskii, V. A., 85f:03047  
 Mauldin, R. Daniel See Censer, Douglas, 85b:04058 and 85f:04002  
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 Srivatsa, V. V. Measure and category approximations for  $C$ -sets. 85e:04004  
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- Armbrust, Manfred Equivalence relations versus unary operations. 85b:08003  
 Balanda, Kevin P. Maximally almost disjoint families of representing sets. 85f:03041  
 Pérez-Jiménez, Mario de J. Ordinal representation of certain extensional structures. (Spanish. English summary) 85d:04003

## 03E25 Axiom of choice and related propositions

- Brunner, Norbert Lindelöf Räume und Auswahlaxiom. (English summary) [Lindelöf spaces and the axiom of choice] 85f:03042  
 The axiom of choice in topology. 85e:03112  
 Howard, Paul E. Rado's selection lemma does not imply the Boolean prime ideal theorem. 85d:03099  
 Pla Carrera, Josep The axiom of choice and the Banach-Tarski paradox. (Catalan) 85e:03113  
 Vayl, V. On deducibility of the axiom of choice from comprehension axioms which contain the  $c$ -operator. 85e:03114  
 Wolk, Elliot S. On the principle of dependent choices and some forms of Zorn's lemma. 85a:03059

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- Aczel, Peter The type theoretic interpretation of constructive set theory: choice principles. 85g:03085  
 Brunner, Norbert Folgenkompaktheit und Auswahlaxiom. [Sequential compactness and the axiom of choice] 85j:04057  
 Diener, Karl-Heinz On constructing infinitary languages  $L_{\omega_1}$  without the axiom of choice. 85a:03078  
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 Moore, Gregory H. ★ Zermelo's axiom of choice. 85b:01036  
 (Zermelo, Ernst) See Moore, Gregory H., 85b:01036

## 03E30 Axiomatics of classical set theory and its fragments

- Friedman, Harvey M. (with Simpson, Stephen G.; Smith, Rick L.) Countable algebra and set existence axioms. 85i:03157
- Jäger, Gerhard A version of Kripke-Platek set theory which is conservative over Peano arithmetic. 85h:03052
- Pabion, J.-F.  $\Pi_2$ -théorie des ensembles. [ $\Pi_2$ -set theory] 85e:03115
- Simpson, Stephen G. See Friedman, Harvey M.; et al., 85i:03157
- Smith, Rick L. See Friedman, Harvey M.; et al., 85i:03157
- Sun, Wen Zhi The consistency of a new axiom system of set theory with urelements. (Chinese) 85i:03158

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- Jäger, Gerhard Iterating admissibility in proof theory. 85k:03040
- Kaufmann, Matt Set theory with a filter quantifier. 85d:03076
- Kühnrich, Martin Eine äquivalente Formalisierung der Logik von Feferman und Aczel. [An equivalent formalization of the Feferman-Aczel logic] 85d:03054

## 03E35 Consistency and independence results

- Abraham, Uri Aronszajn trees on  $\aleph_2$  and  $\aleph_3$ . 85d:03100
- On forcing without the continuum hypothesis. 85f:03043
- A minimal model for  $\neg$ CH: iteration of Jensen's reals. 85f:03044
- Baumgartner, James E. Generic graph construction. 85j:03082
- Brunner, Norbert  $P$ -Räume und Auswahlaxiom. (English summary) [ $P$ -spaces and the axiom of choice] 85f:03045
- Carlson, Tim (with Kunen, Kenneth; Miller, Arnold W.) A minimal degree which collapses  $\omega_1$ . 85g:03074
- David, René  $\Delta_1^1$  reals. 85a:03060
- Dehornoy, Patrick An application of ultrapowers to changing cofinality. 85b:03088
- Devlin, Keith J. A new construction of a Kurepa tree with no Aronszajn subtree. 85j:03083
- Eklöf, Paul C. Set theory and structure theorems. 85a:03061
- Kanovei, V. G. See Uspenskii, V. A., 85f:03047
- Komjáth, Péter A note on Jensen's covering lemma. 85a:03062
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- Kuzichev, A. S. A theorem on consistency of the Zermelo-Fraenkel system ZF. (Russian) 85f:03046
- Malykhin, V. I. Topology and forcing. (Russian) 85b:03089
- Manevits, Larry (with Miller, Arnold W.) Lindelöf models of the reals: solution to a problem of Sikorski. 85b:03090
- Mekler, Alan H. Proper forcing and abelian groups. 85b:03053
- Miller, Arnold W. Additivity of measure implies dominating reals. 85k:03032
- See also Manevits, Larry, 85b:03090 and Carlson, Tim; et al., 85g:03074
- Nyikos, Peter J. A topological test space for many axioms of set theory. (Russian) 85i:03159
- Raisonnier, Jean Ensembles mesurables et consistance de ZF. (English summary) [Measurable sets and consistency of ZF] 85c:03020
- Sheard, Michael Indecomposable ultrafilters over small large cardinals. 85b:03091
- Shelah, Saharon Lifting problem of the measure algebra. 85b:03092
- On universal graphs without instances of CH. 85b:03054
- Stepáns, Juris The number of submodules. 85d:03101
- Tall, Franklin D. Applying set theory to measure theory. 85e:03116
- Todorćević, S. On a conjecture of R. Rado. 85e:03117
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- Uchida, Yasushi Scales on  $\omega_1^*$ . 85i:03160
- Uspenskii, V. A. (with Kanovei, V. G.) Luzin's problems on constituents and their fate. (Russian) 85f:03047
- Wimmers, Edward L. The Shelah  $P$ -point independence theorem. 85e:03118
- (Zarichnyi, M. M.) See Nyikos, Peter J., 85i:03159

## secondary classifications (03E35)

- Abraham, Uri (with Shelah, Saharon) Forcing closed unbounded sets. 85i:03112
- Apter, Arthur W. On a problem of Silver. 85b:03095
- Baldwin, Stewart Generalizing the Mahlo hierarchy, with applications to the Mitchell models. 85d:03106
- Brunner, Norbert The axiom of choice in topology. 85e:03112
- Hilbertsräume mit amorphen Basen. (English summary) [Hilbert spaces with amorphous bases] 85i:03113
- Burns, R. G. (with Okoh, Frank; Smith, Howard; Wiegold, James) On the number of normal subgroups of an uncountable soluble group. 85k:20112
- Bayl, Włodzimierz A counterexample to the generalized Banach theorem. 85f:54067
- Carlson, Tim (with Simpson, Stephen G.) A dual form of Ramsey's theorem. 85h:04002
- Chichón, Jacek On the compactness of some Boolean algebras. 85f:03050
- Ciesielski, Krzysztof On the weight of subspaces. 85f:54004
- Donder, Hans-Dieter (with Koepeke, Peter) On the consistency strength of "accessible" Jónsson cardinals and of the weak Chang conjecture. 85j:03084
- Droste, Manfred On an extendability problem for measures. 85j:28001
- Eda, Katsuya A note on subgroups of  $2^{\aleph_1}$ . 85b:20005
- Eklöf, Paul C. (with Mekler, Alan H.) On endomorphism rings of  $\omega_1$ -separable primary groups. 85i:20052
- Feferman, Solomon Toward useful type-free theories. I. 85i:03068
- Fleissner, William G. Squares of  $Q$  sets. 85b:54006
- Fletcher, Peter (with Kunen, H.-P. A.) On a problem concerning generalizations of realcompact spaces. 85f:54040
- Gardner, R. J. (with Pfeffer, Washek Frank) Some unsolvable questions relating to Radon measures. (Russian) 85b:28011
- Gineburg, John A note on chains of open sets. 85e:54004
- Groszek, Marcia J. (with Slaman, Theodore A.) Independence results on the global structure of the Turing degrees. 85b:03099

- Hart, K. P. More remarks on Souslin properties and tree topologies. 85f:54063
- Howard, Paul E. Rado's selection lemma does not imply the Boolean prime ideal theorem. 85d:03090
- Jech, Thomas J. (with Mitchell, William John) Some examples of precipitous ideals. 85k:03033
- Kanamori, Aki Moras-level combinatorial principles. 85d:03097
- Kanovei, V. G. The structure of constituents of  $\Pi_1^1$ -sets. (Russian) 85j:04002
- Kharasishvili, A. B. The continuum hypothesis and some questions of measure theory. (Russian. English and Georgian summaries) 85h:28004
- Kholshchevnikova, N. N. Undecidability of several questions of convergence of series and sequences. (Russian) 85j:40012
- Koepeke, Peter See Donder, Hans-Dieter, 85j:03084
- Koppelberg, Sabine (with Monk, J. Donald) Homogeneous Boolean algebras with very nonsymmetric subalgebras. 85a:06022
- Kunen, Kenneth ★ Set theory. 85e:03003
- Künzi, H.-P. A. See Fletcher, Peter, 85f:54040
- Laver, Richard Saturated ideals and nonregular ultrafilters. 85e:03110
- Martin, John R. (with Weiss, William) Fixed point sets of metric and nonmetric spaces. 85h:54085
- Mekler, Alan H. See Eklöf, Paul C., 85i:20052
- Mitchell, William John Sets constructed from sequences of measures: revisited. 85j:03052
- The core model for sequences of measures. I. 85i:03163
- See also Jech, Thomas J., 85k:03033
- Monk, J. Donald See Koppelberg, Sabine, 85a:06022
- Nyikos, Peter J. (with Vaughan, Jerry E.) On first countable, countably compact spaces. I. ( $\omega_1$ ,  $\omega_1^*$ )-gaps. 85e:54009
- Okoh, Frank See Burns, R. G.; et al., 85k:20112
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- Čuda, K. Nonstandard models of arithmetic as an alternative basis for continuum considerations. 85g:03095
- Kotlarski, Henryk On cofinal extensions of models of arithmetic. 85d:03129
- Some remarks on initial segments in models of Peano arithmetic. 85h:03076
- secondary classifications (03H15)
- Clote, Peter (with McAloon, Kenneth) Two further combinatorial theorems equivalent to the 1-consistency of Peano arithmetic. 85e:03087
- Grzegorzcyk, Andrzej ★ Zarys arytmetyki teoretycznej. (Polish) [Outline of theoretical arithmetic] 85e:03002
- Knight, Julia Additive structure in uncountable models for a fixed completion of P. 85h:03034
- Macintyre, A. (with Marker, David) Degrees of recursively saturated models. 85e:03106
- Marker, David Degrees of models of true arithmetic. 85i:03109
- See also Macintyre, A., 85e:03106
- McAloon, Kenneth See Clote, Peter, 85e:03087
- Mills, George (with Paris, Jeff) Regularity in models of arithmetic. 85h:03035
- Paris, Jeff See Mills, George, 85h:03035
- Pudlák, Pavel Some prime elements in the lattice of interpretability types. 85k:03038
- Smoryński, C. Nonstandard models and constructivity. 85d:03114
- Spencer, Joel Large numbers and unprovable theorems. 85a:03073

## 03H20 Other nonstandard models [See also 54J05.]

- Hatcher, William S. (with Laflamme, Claude) On the order structure of the hyperreal line. 85d:03130
- Laflamme, Claude See Hatcher, William S., 85d:03130

## secondary classifications (03H20)

- Hort, Christian (with Osswald, Horst) On nonstandard models in higher order logic. 85i:03122
- Osswald, Horst See Hort, Christian, 85i:03122
- Pearce, David (with Rantala, Veikko) A logical study of the correspondence relation. 85h:03009
- Rantala, Veikko See Pearce, David, 85h:03009

## 03H99 None of the above, but in this section

## secondary classifications (03H99)

- Kusraev, A. G. Some categories and functors of Boolean-valued analysis. (Russian) 85d:03103

## 04-XX SET THEORY

## 04-01 Elementary exposition; textbooks

- Cao, Zhi Jiang See Wang, Jian Wu; et al., (Not in MR)
- Hrbáček, Karel (with Jech, Thomas J.) ★ Introduction to set theory. 85m:04001
- Jech, Thomas J. See Hrbáček, Karel, 85m:04001
- Liu, Jing Lin See Wang, Jian Wu; et al., (Not in MR)
- Wang, Jian Wu (with Cao, Zhi Jiang; Liu, Jing Lin) ★ Shishuè gousao lilun. (Chinese) [The theory of the construction of the real numbers] (Not in MR)

## secondary classifications (04-01)

- Doets, H. C. Cantor's paradise. 85e:03001

## 04-02 Advanced exposition (research surveys, monographs, etc.)

## secondary classifications (04-02)

- Kunen, Kenneth ★ Set theory. 85e:03003
- Takeuti, Gaisi (with Zaring, Wilson M.) ★ Introduction to axiomatic set theory. 85b:03003
- Zaring, Wilson M. See Takeuti, Gaisi, 85b:03003



04-03 Historical (must also be assigned at least one classification number from Section 01)

secondary classifications (04-03)

- Anellis, Irving H. Russell's earliest reactions to Cantorian set theory, 1896-1900. 85m:01030
- (Cantor, Georg) See Meyer, Heiner, 85c:01028 and Kertész, Andor, 85h:01027
- Cassinet, Jean La position d'Henri Poincaré par rapport à l'axiome du choix, à travers ses écrits et sa correspondance avec Zermelo (1905-1912). (English summary) [Henri Poincaré's position with respect to the axiom of choice, through his writings and his correspondence with Zermelo (1905-1912)] 85c:01033
- Dugac, Pierre Louis Couturat et Georg Cantor. [Louis Couturat and Georg Cantor] (See 85g:01036)
- Kertész, Andor ★ Georg Cantor (1845-1918): Schöpfer der Mengenlehre. (German) [Georg Cantor (1845-1918): creator of set theory] 85h:01027
- Medvedev, F. A. ★ Ранняя история аксиомы выбора. (Russian) [The early history of the axiom of choice] 85d:01023
- Two proofs of the finite covering theorem. (Russian. English summary) 85g:01019
- From the history of the so-called König theorem in set theory. (Russian) 85b:01035
- Abstract set theories of Cantor and Dedekind. (Russian) 85c:01025
- Metamorphoses of the axiom of choice. (Russian) 85c:01003
- Meyer, Heiner Über einige naturphilosophische Diskussionen im Zusammenhang mit der Begründung der Mengentheorie durch Georg Cantor. [On some discussions on the philosophy of nature in connection with Georg Cantor's foundation of set theory] 85c:01028
- Moore, Gregory H. ★ Zermelo's axiom of choice. 85b:01036
- (Poincaré, Henri) See Cassinet, Jean, 85c:01033
- (Popadić, Milan) See Stipanović, Ernest, 85b:01076
- (Stern, Manfred) See Kertész, Andor, 85h:01027
- Stipanović, Ernest Dr. Milan Popadić (in memoriam). (Serbo-Croatian) 85b:01076
- (Zermelo, Ernst) See Moore, Gregory H., 85b:01036 and Cassinet, Jean, 85c:01033
- Bibliography:
- Cantor, Georg See Kertész, Andor, 85h:01027
- Biography:
- Cantor, Georg See Kertész, Andor, 85h:01027
- Correspondence:
- Poincaré, Henri-Zermelo, Ernst See Cassinet, Jean, 85c:01033
- Obituary:
- Popadić, Milan S. See Stipanović, Ernest, 85b:01076
- 04A05 Relations, functions [See also 08A02.]
- Birkenmeier, C. F. Exponentiation without associativity. (Russian and Czech summaries) 85c:04001
- Both, N. See Purdus, I., 85c:04003
- Engl, H. W. An analytic representation for self-maps of a countably infinite set and its cycles. 85d:04001
- Furtek, Frederick C. A necessary and sufficient condition for a product relation to be total. 85k:04001
- Höft, Hartmut Crossed and complete binary relations. 85b:04001
- Humberstone, I. L. Monadic representability of certain binary relations. 85f:04001
- Itakow, A. G. (with Kalyadin, N. I.) Continuation of certain surjective mappings. (Russian) 85h:04001
- Kalyadin, N. I. See Itakow, A. G., 85h:04001
- Olivier, J.-P. Liaisons entre les  $S$ -relations et les relations de Ferrers. Représentations. [Connections between  $S$ -relations and the Ferrers relations. Representations] 85c:04002
- Purdus, I. (with Both, N.) On the  $n$ -transitivity of relations and transitive elements. 85c:04003
- Reischer, C. (with Simovici, Dan A.) Graph-theoretical aspects of properties of transformations of finite sets. 85d:04002
- Sarnavskii, N. G. Recognition of an ordering predicate as a function of three-valued logic. (Russian) 85i:04001
- Simovici, Dan A. See Reischer, C., 85d:04002
- secondary classifications (04A05)
- Armbrust, Manfred Equivalence relations versus unary operations. 85h:08003
- Burgin, M. S. Extensions of relations. (Russian) 85g:08027
- Cămpian, Maria Limite des relations de tolérance. (Romanian summary) [Limits of tolerance relations] 85f:08002
- Celakovski, N. See Čupona, G.; et al., 85j:20003
- Čepelić, V. An algorithm for finding minimal intersection sets. (Serbo-Croatian summary) 85g:05006a
- An algorithm for minimal abbreviation sets of set families totally unordered with respect to inclusion. (Serbo-Croatian summary) 85g:05006b
- Čupona, G. (with Samardžiski, A.; Celakovski, N.) Roots of permutations. 85j:20003
- Elbers, Chris The number of weak orders. A comment. 85b:05011
- Eroshov, S. A. On the representation of a binary relation by a vector criterion on infinite sets. (Russian) 85b:06002
- Foryš, Wit A fixed point characterization of cofinite languages. 85h:68031
- Gibbon, Greg G. Set mappings of unrestricted order. 85f:04006
- Hardy, D. W. See Thornton, M. C., 85i:20072
- Kilian, Hans Die Anzahl der Surjektionen von  $A$  auf  $B$ . [The number of surjections of  $A$  onto  $B$ ] 85d:05017
- Kim, Jin Bai Tables of  $D$ -classes in the semigroup  $B_n$  of the binary relations on a set  $X$  with  $n$  elements. 85c:20057
- Korec, Ivan  $L$ -dense sets and  $L$ -compatible partial functions. 85d:08003
- Kurpa, Djuro Around the number of chains in partitive sets. 85g:05011

- Osipova, V. A. (with Podinovskii, V. V.; Yashina, N. P.) Noncontradictory extension of preference relations in decision-making problems. (Russian) 85m:90001
- Pérez-Jiménez, Mario de J. Ordinal representation of certain extensional structures. (Spanish. English summary) 85d:04003
- Podinovskii, V. V. See Osipova, V. A.; et al., 85m:90001
- Samardžiski, A. See Čupona, G.; et al., 85j:20003
- Šetelja, Branimir See Ušan, Janes, (85i:20005)
- Silberger, D. M. When is the directed graph  $gf$  isomorphic to  $fg$ ? (Not in MR)
- Simonyan, R. G. Tolerance spaces generated by majority spaces. (Russian. Armenian summary) 85k:08003
- Thornton, M. C. (with Hardy, D. W.) The intersection of the maximal regular subsemigroups of the semigroup of binary relations. 85i:20072
- Todorow, J. Die Äquivalenzklassenbildung für mehrwertige Funktionen am Beispiel der ternären Funktionen von zwei Variablen. [The formation of equivalence classes for multivalued functions, using the example of ternary functions of two variables] 85c:04052
- Ušan, Janes (with Šetelja, Branimir) On some generalizations of reflexive, antisymmetric and transitive relations. (See 85i:20005)
- Wang, Da Bin On the fuzzy Szpilrajn theorem. (Chinese. English summary) 85h:03060
- Yashina, N. P. See Osipova, V. A.; et al., 85m:90001

04A10 Transfinite numbers

- Hu, Qing Ping Solutions in transfinite ordinals of Diophantine and generalized Diophantine equations. II. (Chinese) (Not in MR)
- Pérez-Jiménez, Mario de J. Ordinal representation of certain extensional structures. (Spanish. English summary) 85d:04003
- The power class of the universal ordinal class. (Spanish. English summary) 85j:04001
- Zervos, S. P. Cardinals as orbits of groups of automorphisms of ordered sets. (Russian) 85i:04002
- secondary classifications (04A10)
- Anellis, Irving H. Russell's earliest reactions to Cantorian set theory, 1896-1900. 85m:01030
- Bankston, Paul Topological extensions and subspaces of  $\eta_\alpha$ -sets. 85k:54034

04A15 Descriptive set theory; Borel classifications, Suslin schemes, etc. [See also 03E15, 28A05, 54H05.]

- Bayl, Włodzimierz (with Jasiński, Jakub) A note on Blackwell spaces. (Russian summary) 85i:04003
- Censer, Douglas (with Mauldin, R. Daniel) Borel equivalence and isomorphism of coanalytic sets. 85f:04002
- Cox, G. V. A universal null graph whose domain has positive measure. 85b:04002
- Erdős, Paul (with Kunen, Kenneth; Mauldin, R. Daniel) Some additive properties of sets of real numbers. 85f:04003
- Jasiński, Jakub See Bayl, Włodzimierz, 85i:04003
- Kanovei, V. G. The structure of constituents of  $\Pi_1^1$ -sets. (Russian) 85j:04002
- Kunen, Kenneth See Erdős, Paul; et al., 85f:04003
- Mauldin, R. Daniel See Censer, Douglas, 85f:04002 and Erdős, Paul; et al., 85f:04003
- Schilling, Kenneth (with Vaught, Robert) Borel games and the Baire property. 85d:04004
- Srivatsa, V. V. Measure and category approximations for  $C$ -sets. 85c:04004
- Vaught, Robert See Schilling, Kenneth, 85d:04004
- Xenikakis, P. J. Small sets in the sense of similarity. II. (Serbo-Croatian summary) 85k:04003
- Small sets in the sense of similarity. I. (Serbo-Croatian summary) 85k:04002

secondary classifications (04A15)

- Becker, Howard A technique for proving uniformity. 85c:03108
- Bayl, Włodzimierz A counterexample to the generalized Banach theorem. 85f:54087
- Censer, Douglas (with Mauldin, R. Daniel) On the Borel class of the derived set operator. (French summary) 85b:54058
- Debs, Gabriel Un résultat d'uniformisation borélienne. [A result concerning Borel uniformization] 85k:54043
- Diestel, Joseph ★ Sequences and series in Banach spaces. 85i:46020
- Prolik, Z. (with Holický, P.) Applications of Luzinian separation principles (nonseparable case). 85k:54044
- Hansell, R. W. (with Jayne, J. E.; Rogers, C. A.)  $K$ -analytic sets. 85b:54059
- Hereditarily additive families in descriptive set theory and Borel measurable multimaps. 85b:54060
- Holický, P. See Prolik, Z., 85k:54044
- Jayne, J. E. See Hansell, R. W.; et al., 85b:54059
- Kanovei, V. G. See Uspenskii, V. A., 85f:03047
- Kartanas, Ilias G. The jump inversion theorem for  $Q_{2n+1}$ -degrees. 85h:03050
- Kechris, Alexander S. Effective Ramsey theorems in the projective hierarchy. 85k:03031
- Komjáth, Péter A continuous generalization of the transversal property. 85h:28006
- Margulis, G. A. Finitely-additive invariant measures on Euclidean spaces. 85g:28004
- Mauldin, R. Daniel See Censer, Douglas, 85b:54058
- Morgan, John C., II On the Borel  $\sigma$ -field and the Baire property. 85e:28001
- Rogers, C. A. See Hansell, R. W.; et al., 85b:54059
- Thadde, Josef Constructions of some non- $\sigma$ -porous sets on the real line. 85m:28001
- Uspenskii, V. A. (with Kanovei, V. G.) Luzin's problems on constituents and their fate. (Russian) 85f:03047
- Weiss, Tomasz Projective sets. (Polish) 85g:03073

## 04A20 Combinatorial [See also 05A05]; filters

- Aharoni, Ron (with Nash-Williams, C. St. J. A.; Shelah, Saharon) A general criterion for the existence of transversals. 85g:04001  
(with Nash-Williams, C. St. J. A.; Shelah, Saharon) Another form of a criterion for the existence of transversals. 85i:04004
- Argyros, Spiros A. A short topological proof of a combinatorial result. 85d:04005
- Balanda, Kevin P. Families of partial functions. 85f:04004
- Baumgartner, James E. (with Erdős, Paul; Higgs, Denis) Cross-cuts in the power set of an infinite set. 85m:04002
- de Branges, Louis Consequences of the Cantor construction. 85j:04003
- Burd, Barry Decomposable collections of sets. 85i:04005
- Butkovičová, E. Long chains in Rudin-Frolík order. 85f:04005  
Subsets of  $\beta\mathbb{N}$  without an infimum in Rudin-Frolík order. 85g:04002
- Carlson, Tim (with Simpson, Stephen G.) A dual form of Ramsey's theorem. 85h:04002
- Di Prisco, C. A. (with Marek, Wiktor) Some properties of stationary sets. 85h:04003
- Erdős, Paul See Baumgartner, James E.; et al., 85m:04002
- Gibbon, Greg G. Set mappings of unrestricted order. 85f:04006
- Higgs, Denis See Baumgartner, James E.; et al., 85m:04002
- Komjáth, Péter Families close to disjoint ones. 85h:04004
- Kubota, Nobuo Some properties on a set of ideals. 85b:04003  
Correction to: "Length of an increasing sequence of ideals" [Comment. Math. Univ. St. Paul. 30 (1981), no. 2, 203-209; MR 83b:04002]. 85a:04001
- A splitting property on a set of ideals and a weak saturation hypothesis. 85e:04005
- Kurepa, Djuro A link between ordered sets and trees. On the rectangle tree hypothesis. 85b:04004
- Lopes, Gérard Une nouvelle preuve du théorème de Galvin utilisant les ensembles de Ramsey. (English summary) [A new proof of the Galvin theorem using Ramsey sets] 85c:04001
- Marek, Wiktor See Di Prisco, C. A., 85h:04003
- Nash-Williams, C. St. J. A. See Aharoni, Ron; et al., 85g:04001 and 85i:04004
- Piotrowski, Adam On the  $\diamond$  principle. 85j:04004
- Rosen, Ned L. A characterization of 2-square ultrafilters. 85e:04006
- Shelah, Saharon See Aharoni, Ron; et al., 85g:04001 and 85i:04004
- Simpson, Stephen G. See Carlson, Tim, 85h:04002
- Vojtáš, Peter A transfinite Boolean game and a generalization of Kripke's embedding theorem. 85b:04005
- Wollf, Kurt A Baire-type theorem for cardinals. 85i:04006
- secondary classifications (04A20)
- Aharoni, Ron On the equivalence of two conditions for the existence of transversals. 85b:05003
- Bartoszyński, Tomek Additivity of measure implies additivity of category. 85b:03063
- Bashtakov, A. Maximal almost disjoint families and transitive groups of permutations. (Russian) 85k:20015
- Brown, Timothy C. (with Kupka, Joseph) Ramsey's theorem and Poisson random measures. 85c:80074
- Daykin, David E. (with Hilton, A. J. W.; Miklóš, D.) Pairings from down-sets and up-sets in distributive lattices. 85f:06016
- Deuber, Walter (with Leeb, Klaus; Voigt, Bernd) Partitionseigenschaft von endlichen Folgen. [Partition property of finite sequences] 85i:05019
- Diestel, Joseph ★ Sequences and series in Banach spaces. 85i:46030
- Ditor, S. Z. Cardinality questions concerning semilattices of finite breadth. 85i:06008
- Droste, Manfred Products of conjugacy classes of the infinite symmetric groups. 85b:20002
- Fletcher, Peter (with Kunzi, H.-P. A.) On a problem concerning generalizations of realcompact spaces. 85f:54040
- Gruenhage, G. Applications of a set-theoretic lemma. 85m:54017
- Harshorn, Egbert A constructive proof for a theorem on contractive mappings in power sets. 85a:05005
- Henle, J. M. (with Kanamori, Aki; Kleinberg, E. M.) Filters for square-bracket partition relations. 85e:03109
- Hilton, A. J. W. See Daykin, David E.; et al., 85f:06016
- Kanamori, Aki See Henle, J. M.; et al., 85e:03109
- Killian, Hans Die Anzahl der Surjektionen von  $A$  auf  $B$ . [The number of surjections of  $A$  onto  $B$ ] 85d:05017
- Kleinberg, E. M. See Henle, J. M.; et al., 85e:03109
- (Kunen, Kenneth) See Handbook: Set-theoretic topology, 85k:54001
- Kunzi, H.-P. A. See Fletcher, Peter, 85f:54040
- Kupka, Joseph (with Priky, Karel) The measurability of uncountable unions. 85g:28015  
See also Brown, Timothy C., 85c:80074
- Laver, Richard Products of infinitely many perfect trees. 85j:03078
- Leeb, Klaus See Deuber, Walter; et al., 85i:05019
- Miklóš, D. See Daykin, David E.; et al., 85f:06016
- Milner, E. C. (with Priky, Karel) Some results on the depth and width of partial orders. 85m:06004
- Parovichenko, I. I. Algebraic systems containing semigroups of ultrafilter type. (Russian) 85k:08001
- Pelc, Andrzej (with Priky, Karel) On a problem of Banach. 85d:28007  
Idempotent ideals on abelian groups. 85j:03079
- Peleg, D. A generalized closure and complement phenomenon. 85k:05012
- Priky, Karel See Pelc, Andrzej, 85d:28007; Kupka, Joseph, 85g:28015 and Milner, E. C., 85m:06004
- Prömel, H. J. (with Voigt, Bernd) Canonical partition theorems for parameter sets. 85i:05171
- (Vaughan, Jerry E.) See Handbook: Set-theoretic topology, 85k:54001
- Voigt, Bernd See Deuber, Walter; et al., 85i:05019 and Prömel, H. J., 85i:05171
- Vojtáš, Peter Game properties of Boolean algebras. 85a:06025

- Watro, R. J. On partitioning the infinite subsets of large cardinals. 85f:03052
- Winter, David J. Axiomatic game theory. 85d:03023
- Wollf, Kurt Färbungen großer Würfel mit bunten Wegen. [Coloring of large cubes with colorful paths] 85a:54019
- Zajmowski, Arkus Set theoretical analogues of two combinatorial theorems. 85d:05012

## Handbook:

Set-theoretic topology ★ Handbook of set-theoretic topology. 85k:54001

04A25 Axiom of choice and related propositions (Zorn's lemma, etc.)  
[See also 03E25.]

- Smith, Perry Three propositions equivalent to the axiom of choice. 85b:04006
- secondary classifications (04A25)
- Brunner, Norbert Lindelöf Räume und Auswahlaxiom. (English summary) [Lindelöf spaces and the axiom of choice] 85f:03042  
Folgenkompaktheit und Auswahlaxiom. [Sequential compactness and the axiom of choice] 85j:4007
- The axiom of choice in topology. 85e:03112
- Casaset, Jean La position d'Henri Poincaré par rapport à l'axiome du choix, à travers ses écrits et sa correspondance avec Zermelo (1905-1912). (English summary) [Henri Poincaré's position with respect to the axiom of choice, through his writings and his correspondence with Zermelo (1905-1912)] 85e:01033
- Howard, Paul E. Rado's selection lemma does not imply the Boolean prime ideal theorem. 85d:03099
- Kim, Jin Bai On final choice functions. 85a:90018
- Medvedev, F. A. ★ Ранняя история аксиомы выбора. (Russian) [The early history of the axiom of choice] 85d:01023
- Moore, Gregory H. ★ Zermelo's axiom of choice. 85b:01036
- Pla Carrera, Josep The axiom of choice and the Banach-Tarski paradox. (Catalan) 85e:03113
- (Poincaré, Henri) See Casaset, Jean, 85e:01033
- Policki, P. Kornelius Zum Problem des Beweises ex motu der Existenz Gottes. [On the problem of proving the existence of God ex motu] 85d:03011
- Wolk, Elliot S. On the principle of dependent choices and some forms of Zorn's lemma. 85a:03059
- (Zermelo, Ernst) See Moore, Gregory H., 85b:01036 and Casaset, Jean, 85e:01033
- Correspondence:  
Poincaré, Henri-Zermelo, Ernst See Casaset, Jean, 85e:01033

04A30 Continuum hypothesis, generalized continuum hypothesis  
[See also 03E50, 54A25.]

- Kaburagi, Noriyuki Precipitous ideals over  $\kappa$  and the estimate of the size of  $2^\kappa$ . 85a:04002
- Perov, Zikica About an equivalent of the continuum hypothesis. 85e:04007
- secondary classifications (04A30)
- Dow, Alan CH and open subspaces of  $F$ -spaces. 85e:54036
- Pelc, Andrzej (with Priky, Karel) On a problem of Banach. 85d:28007
- Priky, Karel See Pelc, Andrzej, 85d:28007
- Williams, Scott Orderable subspaces of Čech-remainders. 85e:54028

## 04A99 Miscellaneous topics

- Novotný, Miroslav (with Pawlak, Zdzisław) On a representation of rough sets by means of information systems. 85e:04008
- Pawlak, Zdzisław See Novotný, Miroslav, 85e:04008
- Takawa, Shojiro An extension of  $Q$ -analysis. 85b:04007
- Żakowski, Wojciech Approximations in the space  $(U, \Pi)$ . 85i:04007

## secondary classifications (04A99)

- Dowker, C. H. Isomorphism of categories. 85a:18002
- Kharasishvili, A. B. ★ Инвариантные продолжения меры Лебега. (Russian) [Invariant extensions of the Lebesgue measure] 85i:28001
- Ney, Andrei La  $\Delta$ -métrique, instrument d'approximation dans un clan. I. [The  $\Delta$ -metric, instrument of approximation in a clan. I] 85b:54012
- Wang, Min A discussion about pansystems logic conservation of equivalence relation and semiequivalence relation. (Chinese summary) 85c:02008
- Wu, Shou Zhi On the problem of pansystem simulating transformation of ordered relation. (Chinese summary) 85c:93009

## 05-XX COMBINATORICS (For finite fields, see 11Txx.)

## secondary classifications (05-XX)

- Horák, Peter Solution of four problems from Eger, 1981. I. (See 85d:06001)
- Širáň, Josef Solution of four problems from Eger, 1981. II. (See 85d:05001)
- Windlich, Günter Analytische Lösungen von Diffusionsproblemen mit Unstetigkeiten an der Phasengrenze  $s(t) = \alpha\sqrt{t}$ . [Analytical solutions of diffusion problems with discontinuities at the phase boundary  $s(t) = \alpha\sqrt{t}$ ] (Not in MR)

## 05-00 Handbooks, dictionaries, and other reference works

## secondary classifications (05-00)

- Acheta, Dragan M. ★ The catalogue of all nonisomorphic matroids on at most 8

- elements. 85a:05044
- Pólya, George ★ Collected papers. Vol. IV. 85m:01106b  
(Reynolds, M. C.) See Pólya, George, 85m:01106b  
(Rota, Gian-Carlo) See Pólya, George, 85m:01106b  
(Rybníkov, K. A.) See Combinatorial analysis, 85e:05003
- Schaafl, William L. Vestpocket bibliographies. III. Tessellations and polyominoes; art and music. (Not in MR)
- (Shurt, Rae Michael) See Pólya, George, 85m:01106b
- Bibliography:  
Pólya, George See Pólya, George, 85m:01106b  
Tessellations and polyominoes; art and music See Schaafl, William L., (Not in MR)
- Combinatorial analysis ★ Комбинаторный анализ. (Russian) [Combinatorial analysis] 85e:05003
- Problems:  
Combinatorial analysis ★ Комбинаторный анализ. (Russian) [Combinatorial analysis] 85e:05003

## 05-01 Elementary exposition; textbooks

- Barnette, David ★ Map coloring, polyhedra, and the four-color problem. 85e:05001
- Berge, C. ★ Graphes. (French) [Graphs] 85a:05001
- Bogart, Kenneth P. ★ Introductory combinatorics. 85i:05001
- Bose, Raj Chandra (with Manvel, B.) ★ Introduction to combinatorial theory. 85e:05002
- Jacobs, Konrad ★ Einführung in die Kombinatorik. (German) [Introduction to combinatorics] 85b:05001
- Kerber, A. (with Thürlings, K.-J.) Symmetrieklassen von Funktionen und ihre Abzähltheorie. I. Die Grundprobleme. [Symmetry classes of functions and their enumeration theory. I. Basic problems] 85f:05001a  
(with Thürlings, K.-J.) Symmetrieklassen von Funktionen und ihre Abzähltheorie. II. Hinsnahme darstellungstheoretischer Begriffsbildungen. [Symmetry classes of functions and their enumeration theory. II. Addition of representation-theoretic conceptions] 85f:05001b
- Manvel, B. See Bose, Raj Chandra, 85e:05002
- Pólya, George (with Tarjan, Robert Endre; Woods, Donald R.) ★ Notes on introductory combinatorics. 85k:05001
- Roberts, Fred S. ★ Applied combinatorics. 85b:05001  
(Rybníkov, K. A.) See Combinatorial analysis, 85e:05003
- Sachkov, V. N. ★ Введение в комбинаторные методы дискретной математики. (Russian) [Introduction to combinatorial methods of discrete mathematics] 85g:05001
- Tarjan, Robert Endre See Pólya, George; et al., 85k:05001
- Thürlings, K.-J. See Kerber, A., 85f:05001a and 85f:05001b
- Woods, Donald R. See Pólya, George; et al., 85k:05001
- Combinatorial analysis ★ Комбинаторный анализ. (Russian) [Combinatorial analysis] 85e:05003
- Problems:  
Combinatorial analysis ★ Комбинаторный анализ. (Russian) [Combinatorial analysis] 85e:05003

## secondary classifications (05-01)

- Cvetković, Dragol M. (with Doob, Michael; Sachs, Horst) ★ Спектры графов. (Russian) [Spectra of graphs] 85e:05025
- Doob, Michael See Cvetković, Dragol M.; et al., 85e:05025
- de Guzmán, Miguel Four colors suffice. (Spanish) 85e:05017
- (Korolyuk, V. S.) See Cvetković, Dragol M.; et al., 85e:05025
- Lander, Eric S. ★ Symmetric designs: an algebraic approach. 85d:05041
- Lidl, R. (with Pilz, G.) ★ Angewandte abstrakte Algebra. I. (German) [Applied abstract algebra. I] 85i:00003a  
(with Pilz, G.) ★ Angewandte abstrakte Algebra. II. (German) [Applied abstract algebra. II] 85i:00003b
- Pilz, G. See Lidl, R., 85i:00003a and 85i:00003b
- Sachs, Horst See Cvetković, Dragol M.; et al., 85e:05025
- Siemons, Johannes Paths in a graph. 85a:05057
- (Strok, V. V.) See Cvetković, Dragol M.; et al., 85e:05025

## 05-02 Advanced exposition (research surveys, monographs, etc.)

- Kung, Joseph P. S. (with Rota, Gian-Carlo) The invariant theory of binary forms. 85g:05002
- (Lloyd, E. Keith) See Surveys in combinatorics, 85g:05003
- Rota, Gian-Carlo See Kung, Joseph P. S., 85g:05002
- Stanley, Richard P. ★ Combinatorics and commutative algebra. 85b:05002
- Conference:  
British combinatorial ★ Surveys in combinatorics. 85g:05003
- Southampton ★ Surveys in combinatorics. 85g:05003
- Surveys in combinatorics ★ Surveys in combinatorics. 85g:05003

## secondary classifications (05-02)

- Bermond, J.-C. (with Bond, J.; Paoli, M.; Peyrat, C.) Graphs and interconnection networks: diameter and vulnerability. 85b:05057
- Bond, J. See Bermond, J.-C.; et al., 85b:05057
- Erdős, Paul On some of my conjectures in number theory and combinatorics. 85j:11004
- Exton, Harold ★  $q$ -hypergeometric functions and applications. 85g:33001
- Grannell, M. J. (with Griggs, T. S.) Some recent results on cyclic Steiner quadruple systems—a survey. 85a:05013
- Griggs, T. S. See Grannell, M. J., 85a:05013
- Manocha, H. L. See Srivastava, Hari M., 85m:33016
- (Moser, William) See Research problems in discrete geometry, 85h:52002
- Paoli, M. See Bermond, J.-C.; et al., 85b:05057
- Peyrat, C. See Bermond, J.-C.; et al., 85b:05057
- Pullman, Norman J. Clique coverings of graphs—a survey. 85d:05195

- Sheehan, John Redfield discovered again. 85j:01023
- (Slater, L. J.) See Exton, Harold, 85g:33001
- Sós, Vera T. Irregularities of partitions: Ramsey theory, uniform distribution. 85h:05012
- Srivastava, Hari M. (with Manocha, H. L.) ★ A treatise on generating functions. 85m:33016

Research problems in discrete geometry ★ Research problems in discrete geometry, 1981. 85h:52002

## 05-03 Historical (must also be assigned at least one classification number from Section 01)

## secondary classifications (05-03)

- Biggs, N. L. De Morgan on map colouring and the separation axiom. 85b:01018  
(De Morgan, Augustus) See Biggs, N. L., 85b:01018
- Sheehan, John Redfield discovered again. 85j:01023

## 05-04 Explicit machine computation and programs (not the theory of computation or programming)

- Cornell, D. G. (with Goldberg, Mark) A nonfactorial algorithm for canonical numbering of a graph. 85m:05001
- Eades, Peter A heuristic for graph drawing. 85i:05002
- Etzion, Tuvi (with Lempel, Abraham) Algorithms for the generation of full-length shift-register sequences. 85i:05003
- Foulds, L. R. See Giffin, J. W., 85h:05002
- Giffin, J. W. (with Foulds, L. R.) Efficient graph planarity updating tests. 85h:05002
- Goldberg, Mark See Cornell, D. G., 85m:05001
- Lempel, Abraham See Etzion, Tuvi, 85i:05003

## secondary classifications (05-04)

- Antonelli, S. (with Conte, G.; Delli Guanti, G.) An optimal partitioning algorithm for a new class of graphs. (Italian. English summary) 85i:05181
- Asano, Takao (with Kikuchi, Shunji; Saito, Nobuji) A linear algorithm for finding Hamiltonian cycles in 4-connected maximal planar graphs. 85e:05116
- Bhattacharjee, G. P. See Choah, Ratan K., 85k:06017
- Brucker, P. An  $O(n \log n)$ -algorithm for the minimum cost flow problem in trees. (See 85h:90003)
- Carlyle, J. W. (with Greibach, S. A.; Paz, Azaria) Matching and spanning in certain planar graphs. 85e:68007
- Carpaneto, Giorgio (with Martello, Silvano; Toth, Paolo) An algorithm for the bottleneck traveling salesman problem. 85e:90020
- Chen, M. (with Habib, Michel) Jump number of dags having Dilworth number 2. 85b:68039
- Coffman, E. G., Jr. (with Yannakakis, Mihalis) Permuting elements within columns of a matrix in order to minimize maximum row sum. 85g:90063
- Colbourn, Charles J. (with Harms, Janelle J.) Directing triple systems. 85b:05036
- Conte, G. See Antonelli, S.; et al., 85i:05181
- Cull, Paul (with Ecklund, E. F.) On the Towers of Hanoi and generalized Towers of Hanoi problems. 85a:68059
- Danišević, D. See Jovanović, Antonije D., 85d:68063
- Day, William H. E. Computationally difficult parsimony problems in phylogenetic systematics. 85c:92003
- Delli Guanti, G. See Antonelli, S.; et al., 85i:05181
- Dragon, I. Greedy and optimal paths in a weighted graph without circuits. 85f:68080
- Ecklund, E. F. See Cull, Paul, 85a:68059
- Edenbrandt, Anders See Gilbert, John R.; et al., 85k:68075
- Fàbrega, J. See Fiol, M. A.; et al., 85c:68001
- Farley, Arthur M. (with Shacham, Nachum) Senders in broadcast networks: open irredundancy in graphs. 85b:05155
- Fiol, M. A. (with Yebra, J. L. A.; Fàbrega, J.) Sequence graphs and interconnection networks. 85c:68001
- Gall, Zvi Efficient algorithms for finding maximal matching in graphs. 85e:68083
- Gallo, G. An  $O(n \log n)$  algorithm for the convex bipartite matching problem. 85e:90041
- Choah, Ratan K. (with Bhattacharjee, G. P.) Parallel breadth-first search algorithms for trees and graphs. 85k:68017
- Gilbert, John R. (with Rose, Donald J.; Edenbrandt, Anders) A separator theorem for chordal graphs. 85k:68075
- (Glebov, Oleg) See Jovanović, Antonije D., 85d:68063
- Gorobets, N. M. An algorithm for compiling a catalogue of similar cyclic graphs. (Russian) 85a:05041
- Greibach, S. A. See Carlyle, J. W.; et al., 85c:68067
- Groh, U. (with Hots, G.) Ein Planaritätstest für planar-konvexe Grapheneinbettungen mit linearer Komplexität. [A planarity test for planar-convex embeddings of graphs with linear complexity] 85m:05035
- Gupta, Ram Saran An algorithm for constructing nests of 2 factor designs with orthogonal factorial structure. (Not in MR)
- Habib, Michel See Chen, M., 85b:68039
- Hamacher, Horst (with Picard, Jean-Claude; Queyranne, Maurice) On finding the  $K$  best cuts in a network. 85b:90026
- Harel, Dov (with Tarjan, Robert Endre) Fast algorithms for finding nearest common ancestors. 85f:68081
- Harms, Janelle J. See Colbourn, Charles J., 85b:05036
- Hedetniemi, S. M. See Lankar, Renu; et al., 85k:68078
- Hedetniemi, Stephen See Lankar, Renu; et al., 85k:68078
- Hell, P. (with Kirkpatrick, David G.) Packings by cliques and by finite families of graphs. 85d:05145
- Holliday, R. A simple, automated construction technique for the family of Singer designs. 85b:05032



- Hoskins, J. A. (with Hoskins, W. D.) A faster algorithm for factoring binary matrices. 85c:05011
- Hoskins, W. D. See Hoskins, J. A., 85c:05011
- Hots, G. See Groh, U., 85m:05035
- Huang, Wen Qi See Zhan, Shu Hao, 85a:05026
- Ihm, Heung-Soon (with Ntafos, Simeon C.) On legal path problems in digraphs. 85h:68067
- Jaffe, Jeffrey M. Algorithms for finding paths with multiple constraints. 85c:68060
- Jordan, S. A. (with Shier, D. R.) Algorithms for determining fundamental cycles in a graph. 85g:68026
- Jovanović, Antonije D. (with Danilović, D.) A new algorithm for solving the tree isomorphism problem. (German summary) 85d:68063
- Kikuchi, Shunji See Asano, Takao; et al., 85c:05116
- Kirkpatrick, David G. See Hell, P., 85d:05145
- (Klein, V. I.) See Jovanović, Antonije D., 85d:68063
- Kitagawa, Mitsuhiro See Kumagai, Sadatoshi; et al., 85c:68063
- Kodama, Shinzo See Kumagai, Sadatoshi; et al., 85c:68063
- Korneenko, N. M. Combinatorial algorithms on a class of graphs. (Russian. English summary) 85f:68035
- Kubale, Marek A note on a naive algorithm for edge coloring graphs. (Russian and Polish summaries) 85h:05045
- Kumagai, Sadatoshi (with Kodama, Shinzo; Kitagawa, Mitsuhiro) Submarking reachability of marked graphs. 85c:68062
- Laskar, Renu (with Pfaff, John; Hedetniemi, S. M.; Hedetniemi, Stephen) On the algorithmic complexity of total domination. 85k:68078
- Lee, Der Tsai (with Preparata, F. P.) Euclidean shortest paths in the presence of parallel rectilinear barriers. (German summary) 85a:68150
- (with Preparata, F. P.) Euclidean shortest paths in the presence of rectilinear barriers. 85h:90048
- See also Yeh, D. Y., 85f:68036
- Leung, Joseph Y.-T. Fast algorithms for generating all maximal independent sets of interval, circular-arc and chordal graphs. 85h:68042
- Loukakis, E. Two algorithms for generating and ranking the family of solutions of a finite irreflexive relation. 85g:05082
- Maas, C. Determining the interval number of a triangle-free graph. (German summary) 85d:68064
- Makarov, A. V. Automation of the solution of problems on graphs having symmetry regularity. (Russian) 85c:05091
- Makedon, F. S. (with Papadimitriou, Christos H.; Sudborough, I. H.) Topological bandwidth. 85g:68058
- Marchetti-Spaccamela, A. (with Talamo, M.) Probabilistic analysis of graph colouring algorithms. 85c:68085
- Martello, Silvano See Carpaneto, Giorgio; et al., 85c:90020
- Martin, Alain J. (with Rem, M.) A presentation of the Fibonacci algorithm. 85m:11093
- Maybee, John S. (with Maybee, Stuart J.) An algorithm for identifying Morishima and anti-Morishima matrices and balanced digraphs. 85f:05094
- Maybee, Stuart J. See Maybee, John S., 85f:05094
- Mehlhorn, K. (with Schmidt, B. H.) A single source shortest path algorithm for graphs with separators. 85g:68059
- Miller, Gary L. Isomorphism testing and canonical forms for  $k$ -contractible graphs (a generalization of bounded valence and bounded genus). 85f:68082
- Monien, B. (with Speckmeyer, E.) Some further approximation algorithms for the vertex cover problem. 85c:68086
- Ntafos, Simeon C. See Ihm, Heung-Soon, 85h:68067
- Ochranová, Renata Finding dominators. 85g:68060
- Papadimitriou, Christos H. See Makedon, F. S.; et al., 85g:68058
- Patersen, Lindsay (with Patterson, H. D.) An algorithm for constructing  $\alpha$ -lattice designs. 85c:05013
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- Queyranne, Maurice See Hamacher, Horst; et al., 85b:90026
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- Remlinger, Jörg Generalized block designs as approximations for optimal coverings. 85d:05045
- Roelants van Baronaigen, D. See Ruskey, F., 85f:68084
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- Ruskey, F. (with Roelants van Baronaigen, D.) Fast recursive algorithms for generating combinatorial objects. 85f:68084
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- Schmidt, B. H. See Mehlhorn, K., 85g:68059
- Schmitts, L. An improved transitive closure algorithm. (German summary) 85d:68066
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- Shier, D. R. See Jordan, S. A., 85g:68026
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- Talamo, M. See Marchetti-Spaccamela, A., 85c:68085
- Tanaka, Eichi A bottom-up computing method for the metric between trees defined by Tai. 85d:68067
- Tarasow, Oleg G. The Steiner problem on graphs. (Russian) 85d:05100
- Tarjan, Robert Endre A simple version of Karzanov's blocking flow algorithm. 85g:90049

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- Toth, Paolo See Carpaneto, Giorgio; et al., 85c:90020
- Trusscayński, Mirosław On admissible families of sets. 85a:05006
- Tucker, Alan (with Wilson, Donna) An  $O(n^2)$  algorithm for coloring perfect planar graphs. 85f:68039
- Vestergaard, P. D. (with Vibe-Pedersen, Johs.; Stubkjaer, Erik) An application of graph theory in geographical data handling. 85f:05100
- Vibe-Pedersen, Johs. See Vestergaard, P. D.; et al., 85f:05109
- Viches, S. A. An efficient algorithm to construct the shortest tour of a one-color connected drawing. 85c:68073
- Wilson, Donna See Tucker, Alan, 85f:68039
- Winkler, Peter M. Existence of graphs with a given set of  $r$ -neighborhoods. 85c:05135
- Wormald, Nicholas C. Generating random regular graphs. 85c:68027
- Yannakakis, Mihalis See Coffman, E. G., Jr., 85g:90063
- Yebra, J. L. A. See Fiol, M. A.; et al., 85c:68001
- Yeh, D. Y. (with Lee, Der Tsai) Graph algorithms on a tree-structured parallel computer. 85f:68036
- Zeng, Fan Kan Finding the tree set of a linear graph by the DIDORTG method. (Chinese. English summary) (Not in MR)
- Zhan, Shu Hao (with Huang, Wen Qi) Computer aided design for the problem of geometric distribution. (Chinese. English summary) 85a:05026

# 05-06 Proceedings, conferences, etc.

- (Berge, C.) See Topics on perfect graphs, 85k:05006
- (Boliobas, Béla) See Graph theory and combinatorics, 85k:05003
- (Bondy, J. Adrian) See Progress in graph theory, 85k:05005
- (Chvátal, Václav) See Topics on perfect graphs, 85k:05006
- (Cvetković, Dragolj M.) See Graph theory, 85g:05004
- (Erdős, Paul) See Graph theory and combinatorics, 85k:05003
- (Fiedler, Miroslav) See Graphs and other combinatorial topics, 85d:05001
- (Gutman, I.) See Graph theory, 85g:05004
- (Harary, Frank) See Graphs and applications, 85k:05004
- (Jackson, D. M.) See Enumeration and design, 85m:05002
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- (Maybee, John S.) See Graphs and applications, 85k:05004
- (Mendelsohn, E.) See Algebraic and geometric combinatorics, 85k:05002
- (Murry, U. S. R.) See Progress in graph theory, 85k:05005
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- (Rybníkov, K. A.) See Combinatorial analysis, 85c:05004
- (Shabanov-Kushnarenko, Yu. P.) See Problems of bionics, 85d:05002
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- Algebraic and geometric combinatorics ★ Algebraic and geometric combinatorics. 85k:05002
- Birthdays:
- Erdős, Paul ★ Graph theory and combinatorics. 85k:05003
- Boulder, Colo. ★ Graphs and applications. 85k:05004
- Cambridge ★ Graph theory and combinatorics. 85k:05003
- Colloquium:
- Southeast Asian, graph theory ★ Graph theory, Singapore 1983. 85h:05003
- Combinatorial analysis ★ Комбинаторный анализ. Вып. 5. (Russian) [Combinatorial analysis. No. 5] 85c:05004
- Conference:
- Cambridge, combinatorial ★ Graph theory and combinatorics. 85k:05003
- Combinatorics ★ Progress in graph theory. 85k:05005
- West Coast, combinatorics, graph theory, and computing ★ Proceedings of the second West Coast conference on combinatorics, graph theory, and computing. 85c:05001
- Enumeration and design ★ Enumeration and design. 85m:05002
- Eugene, Ore. ★ Proceedings of the second West Coast conference on combinatorics, graph theory, and computing. 85c:05001
- Graphs and applications ★ Graphs and applications. 85k:05004
- Graphs and other combinatorial topics ★ Graphs and other combinatorial topics. 85d:05001
- Graph theory ★ Graph theory. 85g:05004
- Graph theory and combinatorics ★ Graph theory and combinatorics. 85k:05003
- Novi Sad ★ Graph theory. 85g:05004
- Prague ★ Graphs and other combinatorial topics. 85d:05001
- Problems in combinatorics ★ Problems in combinatorics. 85f:05002
- Problems of bionics ★ Проблемы бионики. Вып. 31. (Russian) [Problems of bionics. No. 31] 85d:05002
- Proceedings:
- West Coast conference on combinatorics, graph theory, and computing ★ Proceedings of the second West Coast conference on combinatorics, graph theory, and computing. 85c:05001
- Progress in graph theory ★ Progress in graph theory. 85k:05005
- Seminar:
- Yugoslav, graph theory ★ Graph theory. 85g:05004
- Singapore ★ Graph theory, Singapore 1983. 85h:05003
- Symposium:
- Colorado, graph theory ★ Graphs and applications. 85k:05004
- Czechoslovak, graph theory ★ Graphs and other combinatorial topics. 85d:05001
- Problems in combinatorics ★ Problems in combinatorics. 85f:05002
- Topics on perfect graphs ★ Topics on perfect graphs. 85k:05006
- Waterloo, Ont. ★ Progress in graph theory. 85k:05005

## secondary classifications (05-06)

- (Bariotti, Adriano) See Proceedings: Conference on combinatorial and incidence geometry: principles and applications. 85g:51001
- (Čupona, G.) See Proceedings: Algebraic conference. 85i:20004
- (Dubrov, Ya. A.) See Systems-theoretic methods and their application in automated systems. 85m:93004
- (Greene, Curtis) See Combinatorics and algebra. 85k:00007
- (Holroyd, F. C.) See Geometrical combinatorics. 85k:51003
- (King, R. Bruce) See Chemical applications of topology and graph theory. 85g:92023
- (Lloyd, E. Keith) See Surveys in combinatorics. 85g:05003
- (Marchi, Mario) See Proceedings: Conference on combinatorial and incidence geometry: principles and applications. 85g:51001
- (Mijajlović, Zarko) See Proceedings: Algebraic conference. 85i:20004
- (Milić, Svetosar) See Proceedings: Algebraic conference. 85i:20004
- (Perić, V.) See Proceedings: Algebraic conference. 85i:20004
- (Prošić, Slavica B.) See Proceedings: Algebraic conference. 85i:20004
- (Pulleyblank, William) See Progress in combinatorial optimization. 85h:90073
- (Tallini, Giuseppe) See Proceedings: Conference on combinatorial and incidence geometry: principles and applications. 85g:51001
- (Wilson, Robin James) See Geometrical combinatorics. 85k:51003
- Athens, Ga. ★ Chemical applications of topology and graph theory. 85g:92023
- Belgrade ★ Proceedings of the third algebraic conference. 85i:20004
- Boulder, Colo. ★ Combinatorics and algebra. 85k:00007
- Chemical applications of topology and graph theory ★ Chemical applications of topology and graph theory. 85g:92023
- Combinatorics and algebra ★ Combinatorics and algebra. 85k:00007
- Conference:
- Algebraic ★ Proceedings of the third algebraic conference. 85i:20004
- AMS-IMS-SIAM, combinatorics and algebra ★ Combinatorics and algebra. 85k:00007
- British combinatorial ★ Surveys in combinatorics. 85g:05003
- Combinatorial and incidence geometry: principles and applications ★ Atti del convegno "Geometria combinatoria e di incidenza: fondamenti e applicazioni". (Italian) [Proceedings of the conference on combinatorial and incidence geometry: principles and applications] 85g:51001
- Combinatorics ★ Progress in combinatorial optimization. 85h:90073
- Geometrical combinatorics ★ Geometrical combinatorics. 85k:51003
- Geometrical combinatorics ★ Geometrical combinatorics. 85k:51003
- La Mendola ★ Atti del convegno "Geometria combinatoria e di incidenza: fondamenti e applicazioni". (Italian) [Proceedings of the conference on combinatorial and incidence geometry: principles and applications] 85g:51001
- Milton Keynes ★ Geometrical combinatorics. 85k:51003
- Proceedings:
- Algebraic conference ★ Proceedings of the third algebraic conference. 85i:20004
- Conference on combinatorial and incidence geometry: principles and applications ★ Atti del convegno "Geometria combinatoria e di incidenza: fondamenti e applicazioni". (Italian) [Proceedings of the conference on combinatorial and incidence geometry: principles and applications] 85g:51001
- Progress in combinatorial optimization ★ Progress in combinatorial optimization. 85h:90073
- Southampton ★ Surveys in combinatorics. 85g:05003
- Surveys in combinatorics ★ Surveys in combinatorics. 85g:05003
- Symposium:
- Chemical applications of topology and graph theory ★ Chemical applications of topology and graph theory. 85g:92023
- Systems-theoretic methods and their application in automated systems ★ Теоретико-системные методы и их использование в автоматизированных системах. (Russian) [Systems-theoretic methods and their application in automated systems] 85m:93004
- Waterloo, Ont. ★ Progress in combinatorial optimization. 85h:90073

## secondary classifications (05-06)

- Cai, Mao Cheng See Zhang, Zhong Fu; et al., (Not in MR)
- Lin, Yi Xun See Zhang, Zhong Fu; et al., (Not in MR)
- Zhang, Zhong Fu (with Cai, Mao Cheng; Lin, Yi Xun) On the count of runs. (Chinese. English summary) (Not in MR)

## 05Axx Classical combinatorial problems

## 05A05 Combinatorial choice problems (subsets, representatives, permutations)

- Aharoni, Ron On the equivalence of two conditions for the existence of transversals. 85b:05003
- Alon, N. On the density of sets of vectors. 85b:05004
- Amel'kin, V. A. Combinatorics of matrices and coding of fields. (Russian) 85g:05005
- Assouad, Patrice Sur le lemme de Sauer et un calcul d'entropie. (English summary) [On Sauer's lemma and  $\epsilon$ -entropy] 85b:05005
- Batten, Lynn Margaret A problem in transversal theory. 85d:05003
- Bollobás, Béla (with Duchet, P.) On Helly families of maximal size. 85d:05004
- Buttsworth, R. N. An inclusion-exclusion transform. 85k:05007
- Cai, Mao Cheng On a problem of Katona on minimal completely separating systems with restrictions. 85e:05005
- Cameron, Peter J. Colour schemes. 85m:05003
- Čepulák, V. An algorithm for finding minimal intersection sets. (Serbo-Croatian summary) 85g:05006a
- An algorithm for minimal abbreviation sets of set families totally unordered with respect to inclusion. (Serbo-Croatian summary) 85g:05006b

- Daykin, David E. (with Frankl, Peter) On Kruskal's cascades and counting containments in a set of subsets. 85a:05002
- DeTemple, Duane (with Robertson, Jack) Permutations associated with billiard paths. 85b:05006
- Duchet, P. See Bollobás, Béla. 85d:05004
- Frankl, Peter (with Füredi, Zoltán) A new generalization of the Erdős-Ko-Rado theorem. 85d:05005
- (with Odlyzko, A. M.) On subsets with cardinalities of intersections divisible by a fixed integer. 85a:05003
- (with Singhi, Navin) Linear dependencies among subsets of a finite set. 85j:05001
- A new short proof for the Kruskal-Katona theorem. 85g:05007
- See also Daykin, David E., 85a:05002
- Füredi, Zoltán On finite set-systems whose every intersection is a kernel of a star. 85d:05006
- See also Frankl, Peter, 85d:05005
- Gerbő-Graus, Mihály An extremal theorem on divisors of a number. 85g:05008
- Gillis, J. (with Zeilberger, D.) A direct combinatorial proof of a positivity result. 85e:05006
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- Katriňák, T.  $p$ -algebras. **85a:06019**  
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- dos Santos, Raquel Prata Congruences in pseudocomplemented algebras. (Portuguese. English summary) (See **85i:06012**)
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- Luppi, Carla On the problem of representability for topological Heyting algebras. (Italian. English summary) **85b:06013**  
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- Dobbertin, Hans Measurable refinement monoids and applications to distributive semilattices, Heyting algebras, and Stone spaces. **85h:20072**
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- Higgs, Denis Injectivity in the topos of complete Heyting algebra valued sets. **85m:18003**
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- Yaqub, Fawzi M. Representation of Post  $L$ -algebras by rings of sets. (Italian summary) **85f:06019**

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- Malaf, V. P. Chain precomplete classes of functions of many-valued logic. (Russian) **85c:03007**

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- de Glas, Michel Sur l'atomicité des algèbres de Lukasiewicz. [Atomicity of Lukasiewicz algebras] **85m:06024**
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- Furtek, Frederick C. A necessary and sufficient condition for a product relation to be total. **85k:04001**
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- Meekhi, V. Yu. A discriminator variety of Heyting algebras with involution. (Russian) **85a:06020**
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- Cornish, William H. Constructions for BCK-algebras. **85f:06020**  
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- Shen, Bai Ying A new system of axioms for BCI-algebras, connected with the combinators B, C, and I. (Chinese. English summary) **85j:03115**
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- Matei, S. Die Interpolierung Boolcher Funktionen. (Romanian summary) [The interpolation of Boolean functions] 85f:06024

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- Melter, R. (with Rudeanu, S.) Functions characterized by functional Boolean equations. 85c:06019  
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- Burlacu, E. (with Nălașu, P.) On Schröder-Moisil algebras. (Romanian. English summary) 85c:06020  
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## 06Fxx Ordered structures [See also 22A26, 54F05.]

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## 08B30 Injectives, projectives

- McNulty, George F. (with Nordahl, T.; Scheiblich, H. E.) Injectives and projectives in term finite varieties of algebras. 85j:08022  
 Nordahl, T. See McNulty, George F.; et al., 85j:08022  
 Scheiblich, H. E. See McNulty, George F.; et al., 85j:08022

## secondary classifications (08B30)

- Duda, Jaromír Regularity of algebras with applications to congruence class geometry. 85m:08007

## 08B99 None of the above, but in this section

- Bokut', L. A. Some problems of combinatorial algebra. (Russian) 85h:08013  
 Davey, B. A. (with Werner, Heinrich) Dualities and equivalences for varieties of algebras. 85c:08012  
 Kalajdilevski, S. Subalgebras of distributive and commutative semigroups. (Macedonian summary) 85h:08014  
 Mal'tsev, Yu. N. Varieties of algebras whose critical algebras are arithmetic. (Russian) 85c:08013  
 Werner, Heinrich See Davey, B. A., 85c:08012

## secondary classifications (08B99)

- Bakhturin, Yu. A. On basic and axiomatic ranks of nilpotent varieties of Lie algebras. 85j:17011  
 Bowers, J. F. Classes of groups which resemble varieties. 85h:20036  
 Gobechiya, M. I. Varieties of biautomata. (Russian. English and Georgian summaries) 85f:68071  
 Jesek, Jaroslav (with Nešetřil, Jaroslav) Ramsey varieties. 85c:05008  
 Nešetřil, Jaroslav See Jesek, Jaroslav, 85c:05008  
 Volkov, M. V. Varieties of associative rings closed under ideal sums. 85a:16021

## 08Cxx Classes of algebras

## 08C05 Categories of algebras [See also 18C05.]

## secondary classifications (08C05)

- Adámek, J. (with Merzenich, Wolfgang) Fixed points as equations and solutions. 85i:18011  
 Arnaudov, Ya. N. See Topencharov, V., (85i:20005)  
 Borceux, Francis (with Van den Bosch, Gilberte) ★ Algebra in a localic topos with applications to ring theory. 85h:18005  
 Burroni, Albert Algèbres graphiques. Suite: les bidules. [Graph algebras. Continuation: bidules (adjoint pairs of endofunctors)] 85b:18002  
 Davis, Robert Clay Combinatorial examples in universal coalgebras. 85h:18010a  
 Combinatorial examples in universal coalgebras. II. 85i:18010b  
 Combinatorial examples in universal coalgebras. III. 85i:18010c  
 Hatcher, William S. With Whitney, Stephen. 85h:18009  
 Knoebel, Arthur Free algebras—are they categorically definable? 85j:08021  
 Koubek, V. Full embeddability into categories of generalized algebras. 85a:18009  
 Merzenich, Wolfgang See Adámek, J., 85i:18011

- Pastor, Ana Epis of some categories of  $Z$ -continuous partial algebras. 85c:18005a  
 The epis of the category of ordered algebras and  $Z$ -continuous homomorphisms. 85c:18005b  
 Plotkin, E. B. Multitype multioperator groups. (Russian) 85i:20079  
 Topencharov, V. (with Arnaudov, Ya. N.) Two algebraic varieties related with CAT. (See 85i:20005)  
 Van den Bosch, Gilberte See Borceux, Francis, 85h:18005  
 Whitney, Stephen (with Hatcher, William S.) Characterizing categories of algebras. 85h:18009

## 08C10 Axiomatic model classes [See also 03Cxx, in particular 03C60.]

- Baïramov, R. A. (with Mamedov, O. M.) Nonstandard subdirect representations in axiomatizable classes. (Russian) 85m:08016  
 Fujiwara, Tsuyoshi Characterization of axiomatic classes of groupoids closed under identity element extensions. 85h:08015  
 Gifman, E. A. Indecomposable elements of lattices of universal classes. (Russian) 85j:08023  
 Mamedov, O. M. See Baïramov, R. A., 85m:08016

## secondary classifications (08C10)

- Burris, Stanley Model companions for finitely generated universal Horn classes. 85g:03052  
 Kashiwagi, Takao Note on algebraic extensions in universal classes. 85c:03011  
 Ploss, A. G. The operation of Cartesian product. (Russian) 85b:08009

## 08C15 Quasivarieties

- Bloom, Stephen L. (with Wright, Jesse)  $P$ -varieties: a signature independent characterization of varieties of ordered algebras. 85c:08014  
 Dumitrashtu, S. S. Topological properties of homomorphisms of universal algebras. (Russian) 85j:08024  
 Gorbunov, V. A. Quasi-identities of two-element algebras. (Russian) 85j:08025  
 Characterization of residually small quasivarieties. (Russian) 85h:08013  
 Axiomatizability of replicative classes. (Russian) 85i:08006  
 Gvaramiya, A. A. Mal'tsev's theorem on quasivarieties for multitype algebras. (Russian) 85h:08014  
 Wright, Jesse See Bloom, Stephen L., 85c:08014

## secondary classifications (08C15)

- Ailbong-Ibe, U. The subclasses of implicationally defined classes of algebras. III. 85h:08008  
 Gorbunov, V. A. (with Tumanov, V. I.) Construction of lattices of quasivarieties. (Russian) 85c:08013  
 Sapir, M. V. Varieties with a countable number of subquasivarieties. (Russian) 85i:20066  
 Tumanov, V. I. See Gorbunov, V. A., 85c:08013  
 Vernikov, B. M. (with Volkov, M. V.) Complements in lattices of varieties and quasivarieties. (Russian) 85b:08010  
 Volkov, M. V. See Vernikov, B. M., 85b:08010

## 08C99 None of the above, but in this section

## secondary classifications (08C99)

- Margolis, Stuart W. (with Pin, J.-E.) Minimal noncommutative varieties and power varieties. 85i:20064  
 Markovaki, Smile  $n$ -subgroupoids of cancellative groupoids. (Macedonian summary) 85g:20007  
 Pin, J.-E. See Margolis, Stuart W., 85i:20064

## 11-XX NUMBER THEORY

## 11-00 Handbooks, dictionaries, and other reference works

## secondary classifications (11-00)

- Chen, Cheng-Tie (with Kassam, Saleem A.) Robust Wiener filtering for multiple inputs with channel distortion. (Not in MR)  
 Kassam, Saleem A. See Chen, Cheng-Tie, (Not in MR)  
 Savitskaya, T. N. Postnikov decompositions of a fibration with  $K(x, n)$  fiber. (Russian) (Not in MR)

## 11-01 Elementary exposition; textbooks

- Dodd, Fred ★ Number theory in the quadratic field with golden section unit. 85a:11001  
 Frey, Gerhard ★ Elementare Zahlentheorie. (German) [Elementary number theory] 85m:11001  
 Galochkin, A. I. (with Nesterenko, Yu. V.; Shidlovskii, A. B.) ★ Введение в теорию чисел. (Russian) [Introduction to number theory] 85j:11001  
 (Hase, Helmut) See Pieper, H., 85c:11001  
 (Kansmitau, Shigeru) See Narkiewicz, W., 85j:11002  
 Narkiewicz, W. ★ Number theory. 85j:11002  
 Nesterenko, Yu. V. See Galochkin, A. I.; et al., 85j:11001  
 Pieper, H. ★ Zahlen aus Primzahlen. (German) [Numbers from primes] 85c:11001  
 Postnikov, M. M. ★ Введение в теорию алгебраических чисел. (Russian) [Introduction to algebraic number theory] 85d:11001  
 (Reichardt, H.) See Pieper, H., 85c:11001  
 Ribenboim, Paulo "1093". 85c:11001

Rosen, Kenneth H. ★ Elementary number theory and its applications. 85m:11002

Schroeder, M. R. ★ Number theory in science and communication. 85j:11003

Shidlovskii, A. B. See Galochkin, A. I.; et al., 85j:11001

Washington, Lawrence C. ★ Introduction to cyclotomic fields. 85g:11001

#### secondary classifications (11-01)

(Bühler, Walter K.) See Scharlau, Winfried, 85m:11003

(Cornell, Gary) See Scharlau, Winfried, 85m:11003

Heyworth, Malcolm R. A conjecture on Mersenne's conjecture. 85a:11002

Hlawka, Edmund Zum Zahlbegriff. [On the concept of number] 85d:01003

Kulikov, L. Ya. ★ Algèbre et théorie des nombres. (French) [Algebra and number theory] 85e:00003

Llorente, Pascual Some problems in the theory of algebraic numbers. (Spanish) 85k:11051

Opolka, Hans See Scharlau, Winfried, 85m:11003

(Parichevskii, O.) See Kulikov, L. Ya., 85e:00003

Scharlau, Winfried (with Opolka, Hans) ★ From Fermat to Minkowski. 85m:11003

#### 11-02 Advanced exposition (research surveys, monographs, etc.)

Andrews, George E. ★ Теория разбиения. (Russian) [The theory of partitions] 85f:11001

Erdős, Paul On some of my conjectures in number theory and combinatorics. 85j:11004

Fel'dman, N. I. ★ Седьмая проблема Гильберта. (Russian) [Hilbert's seventh problem] 85b:11001

Lang, Serge ★ Fundamentals of Diophantine geometry. 85j:11005

Mahler, Kurt Some suggestions for further research. 85e:11002

(Stechkin, B. S.) See Andrews, George E., 85f:11001

#### secondary classifications (11-02)

van Emde Boas, P. Machine models, computational complexity and number theory. 85d:68028

Exton, Harold ★ q-hypergeometric functions and applications. 85g:33001

Gelbart, Stephen An elementary introduction to the Langlands program. 85e:11094

Meyer, Curt Automorphe Funktionen und Zahlentheorie. [Automorphic functions and number theory] 85a:11022

Mines, Ray Algebraic number theory, a survey. 85b:03108

(Slater, L. J.) See Exton, Harold, 85g:33001

#### 11-03 Historical (must also be assigned at least one classification number from Section 01)

(Bühler, Walter K.) See Scharlau, Winfried, 85m:11003

(Cornell, Gary) See Scharlau, Winfried, 85m:11003

Opolka, Hans See Scharlau, Winfried, 85m:11003

Scharlau, Winfried (with Opolka, Hans) ★ From Fermat to Minkowski. 85m:11003

#### secondary classifications (11-03)

Bashmakova, I. G. (with Slavutin, E. I.) ★ История диофантова анализа. (Russian) [History of Diophantine analysis] 85m:01004

Indeterminate equations and their role in the development of algebra. (Russian. English summary) 85m:01005

Berndt, Bruce C. (with Evans, Ronald J.; Wilson, B. M.) Chapter 3 of Ramanujan's second notebook. 85c:11020

(Diophantus of Alexandria) See Bashmakova, I. G., 85m:01004

Edwards, Harold M. Kummer, Eisenstein, and higher reciprocity laws. 85c:01023

Engelman, Steven B. ★ Families of curves and the origins of partial differentiation. 85j:01012

Evans, Ronald J. See Berndt, Bruce C.; et al., 85c:11020

(de Fermat, Pierre) See Bashmakova, I. G., 85m:01004

(Goldbach, Christian) See Yushkevich, A. P., 85e:01051

Gupta, Radha Charan Lindemann's discovery of the transcendence of  $\pi$ : a centenary tribute. 85c:01025

(Hasse, Helmut) See Leopoldt, H.-W., 85c:01035

(Hermann, J.) See Yushkevich, A. P., 85e:01051

Hlawka, Edmund Zum Zahlbegriff. [On the concept of number] 85d:01003

Hofmann, J. E. Über ein Beispiel zur unbestimmten Analytik und seine allgemeine Bedeutung. [On an example for the undetermined analytics and its general significance] (See 85i:00007)

Hornfeck, B. Hans-Heinrich Ostmann: 1913-1959. (German) 85m:01064

Johnsen, Karsten Zum Beweis von C. F. Gauss für die Irreduzibilität des p-ten Kreisteilungspolynoms. (English and French summaries) [On the proof of C. F. Gauss concerning the irreducibility of the pth cyclotomic polynomial] 85i:01016

Karatsuba, A. A. Number theory. (Russian) (See 85g:01004)

See also Vinogradov, I. M., 85j:11007

Kopelevich, Yu. Kh. See Yushkevich, A. P., 85e:01051

(Leibniz, Gottfried Wilhelm) See Yushkevich, A. P., 85e:01051

Leopoldt, H.-W. Zum wissenschaftlichen Werk Helmut Hasse. [On the scientific work of Helmut Hasse] 85c:01035

van Maanen, Jan A. Euler and Goldbach on Fermat's numbers:  $F_n = 2^{2^n} + 1$ . (Dutch) 85i:01014

Mal'nev, L. E. Prime values of the polynomial  $x^2 + x + 41$ . (Russian) 85k:01001

Martinet, Jacques Sur l'ouvrage de Hasse: Über die Klassenzahl abelscher Zahlkörper. [On Hasse's On the class number of abelian number fields] 85m:11071

Nikol'skii, Milenko The relation between Eudoxus' theory of proportions and Dedekind's theory of cuts. (See 85i:00007)

(Ostmann, Hans-Heinrich) See Hornfeck, B., 85m:01064

Rashed, R. Nombres amiables, parties aliquotes et nombres figurés aux XIIIème et XIVème siècles. [Amicable numbers, aliquot parts and figurate numbers in the XIIIth and XIVth centuries] 85d:01011

Ribenboim, Paulo The work of Kummer on Fermat's last theorem. 85d:11028

Kummer's ideas on Fermat's last theorem. 85c:01029

The history of Fermat's last theorem. (Portuguese) 85m:01000

Schneider, Ivo Potenzsummenformeln im 17. Jahrhundert. (English and French summaries) [Power series formulas in the 17th century] 85h:01017

Schneider, Theodor Das Werk C. L. Siegels in der Zahlentheorie. [C. L. Siegel's work in number theory] 85j:01031

Scriba, Christoph J. Eulers zahlentheoretische Studien im Lichte seines wissenschaftlichen Briefwechsels. [Euler's number-theoretic studies in the light of his scientific correspondence] 85j:01016

(Siegel, Carl Ludwig) See Schneider, Theodor, 85j:01031

Slavutin, E. I. See Bashmakova, I. G., 85m:01004

Vinogradov, I. M. (with Karatsuba, A. A.) The method of trigonometric sums in number theory. (Russian) 85j:11007

Well, André ★ Number theory. 85c:01004

Wilson, B. M. See Berndt, Bruce C.; et al., 85c:11020

Yushkevich, A. P. (with Kopelevich, Yu. Kh.) ★ Христиан Гольдбах (1690-1764). (Russian) [Christian Goldbach (1690-1764)] 85e:01051

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Goldbach, Christian See Yushkevich, A. P., 85e:01051

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de Fermat, Pierre See Bashmakova, I. G., 85m:01004

Goldbach, Christian See Yushkevich, A. P., 85e:01051

Ostmann, Hans-Heinrich See Hornfeck, B., 85m:01064

#### Correspondence:

Goldbach, C.-Hermann, J. See Yushkevich, A. P., 85e:01051

Goldbach, C.-Leibniz, G. W. See Yushkevich, A. P., 85e:01051

#### 11-04 Explicit machine computation and programs (not the theory of computation or programming)

Kościełny, Czesław Software approach to computing in finite fields with applications to error-correcting coding techniques and cryptography. (Polish. English and Russian summaries) 85j:11006

te Riele, H. J. J. Iteration of number-theoretic functions. 85e:11003

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Beynon, W. M. A formal account of some elementary continued fraction algorithms. 85c:68024

Cartier, Pierre Comment l'hypothèse de Riemann ne fut pas prouvée (extraits de deux lettres de P. Cartier à A. Weil, datées du 12 août et du 15 septembre 1979). [How the Riemann hypothesis was not proved (extracts from two letters of P. Cartier to A. Weil, dated 12 August and 15 September 1979)] 85f:11035

von sur Gathen, Joachim (with Kaltofen, Erich) Polynomial-time factorization of multivariate polynomials over finite fields. 85d:11104

Gerver, Joseph L. Factoring large numbers with a quadratic sieve. 85c:11122

Hagie, Peter, Jr. Sketch of a proof that an odd perfect number relatively prime to 3 has at least eleven prime factors. 85b:11004

Kaltofen, Erich See von sur Gathen, Joachim, 85d:11104

Lenstra, H. W., Jr. Primality testing. 85g:11117

van de Lune, J. (with te Riele, H. J. J.) On the zeros of the Riemann zeta function in the critical strip. III. 85e:11063

McCurley, Kevin S. Prime values of polynomials and irreducibility testing. 85e:11066

Explicit estimates for the error term in the prime number theorem for arithmetic progressions. 85e:11005

Ozeki, M. (with Washio, T.) Table de coefficients fourieriens des séries d'Eisenstein de degré deux. II. [Table of Fourier coefficients of Eisenstein series of degree two. II] 85h:11027

(with Washio, T.) Table of the Fourier coefficients of Eisenstein series of degree 3. 85d:11054

Pritchard, Paul A. A case study of number-theoretic computation: searching for primes in arithmetic progression. 85g:11119

Rajagopal, A. K. (with Uppuluri, V. R. R.; Scott, David S.; Sitharama Iyengar, S.; Yellayi, Mohan) New structural properties of strings generated by leading digits of  $2^n$ . 85j:11087

te Riele, H. J. J. On generating new amicable pairs from given amicable pairs. 85d:11107

See also van de Lune, J., 85e:11063

Scott, David S. See Rajagopal, A. K.; et al., 85j:11087

Sitharama Iyengar, S. See Rajagopal, A. K.; et al., 85j:11087

Uppuluri, V. R. R. See Rajagopal, A. K.; et al., 85j:11087

Washio, T. See Ozeki, M., 85d:11054 and 85h:11027

Williams, Hugh Cowie Factoring on a computer. 85h:11079

Yellayi, Mohan See Rajagopal, A. K.; et al., 85j:11087

Zeng, Xian Chang On the algorithm to realize theorem proving and solving problem. (Not in MR)

#### Correspondence:

Cartier, Pierre-Weil, A. See Cartier, Pierre, 85f:11035

#### 11-06 Proceedings, conferences, etc.

(Amice, Y.) See Study group: Ultrametric analysis, 85h:11001a and 85h:11001b

(Christol, G.) See Study group: Ultrametric analysis, 85h:11001a and 85h:11001b

(Chudnovsky, D. V.) See Number theory, 85g:11007

(Chudnovsky, G. V.) See Number theory, 85g:11007

(Cohn, Harvey) See Number theory, 85g:11007

- (Hambilton, I.) See Quadratic and Hermitian forms. 85b:11001  
 (Herb, Rebecca) See Lie group representations. 85c:11002  
 (Jager, H.) See Number theory. 85b:11001  
 (Kudla, Stephen S.) See Lie group representations. 85c:11002  
 (Lipman, Ronald L.) See Lie group representations. 85c:11002  
 (Morita, Yasuo) See Automorphic forms of several variables. 85g:11003  
 (Nathanson, M. B.) See Number theory. 85g:11007  
 (Niha'ek, S. M.) See Conference: Analytical methods in number theory and analysis. 85g:11007

- (Riehm, C.) See Quadratic and Hermitian forms. 85b:11001  
 (Robba, P.) See Study group: Ultrametric analysis. 85b:11001a and 85b:11001b  
 (Rosenberg, Jonathan) See Lie group representations. 85c:11002  
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 (Taktakshyan, L. A.) See Automorphic functions and number theory. 85b:11002  
 (Vankov, A. B.) See Automorphic functions and number theory. 85b:11002  
 (Vinoogradov, A. I.) See Automorphic functions and number theory. 85b:11002  
 (Volkov, E. V.) See Conference: Analytical methods in number theory and analysis. 85g:11007

Automorphic forms and related topics ★ Automorphic forms and related topics. (Japanese) 85g:11002

Automorphic forms of several variables ★ Automorphic forms of several variables. 85g:11003

Automorphic functions and number theory ★ Автоморфные функции и теория чисел. II. (Russian) [Automorphic functions and number theory. II] 85b:11002

College Park, Md. ★ Lie group representations. II. 85c:11002

Conference:

Analytical methods in number theory and analysis ★ International conference on analytical methods in number theory and analysis. (Russian) 85g:11007

Lie group representations ★ Lie group representations. II. 85c:11002

Number theory ★ Number theory. Noordwijkerhout 1983. 85b:11001

Quadratic forms and Hermitian  $K$ -theory ★ Quadratic and Hermitian forms. 85b:11001

Distribution of values of arithmetic functions ★ Distribution of values of arithmetic functions. 85g:11004

Hamilton, Ont. ★ Quadratic and Hermitian forms. 85b:11001

Katata ★ Automorphic forms of several variables. 85g:11003

Lie group representations ★ Lie group representations. II. 85c:11002

Moscow ★ International conference on analytical methods in number theory and analysis. (Russian) 85g:11007

New York ★ Number theory. 85g:11007

Noordwijkerhout ★ Number theory. Noordwijkerhout 1983. 85b:11001

Number theory ★ Théorie des nombres. Année 1978-1979. (French) [Number theory. 1978-1979] 85g:11006

Prehomogeneous vector spaces and related topics ★ Prehomogeneous vector spaces and related topics. (Japanese) 85g:11008

Quadratic and Hermitian forms ★ Quadratic and Hermitian forms. 85b:11001

Seminar:

Number theory ★ Séminaire de théorie des nombres. 1982-1983. (French) [Seminar on number theory. 1982-1983] 85g:11009

Study group:

Ultrametric analysis ★ Groupe d'étude d'analyse ultramétrique. 10<sup>e</sup> année: 1982/83. Fasc. 1. (French) [Study group on ultrametric analysis. 10th year: 1982/83. No. 1] 85b:11001a

Symposium:

Automorphic forms and related topics ★ Automorphic forms and related topics. (Japanese) 85g:11002

Automorphic forms of several variables ★ Automorphic forms of several variables. 85g:11003

Distribution of values of arithmetic functions ★ Distribution of values of arithmetic functions. 85g:11004

Division of mathematics of the Taniguchi Foundation ★ Automorphic forms of several variables. 85g:11003

Prehomogeneous vector spaces and related topics ★ Prehomogeneous vector spaces and related topics. (Japanese) 85g:11008

Talence ★ Séminaire de théorie des nombres. 1982-1983. (French) [Seminar on number theory. 1982-1983] 85g:11009

secondary classifications (11-06)

(Bak, Anthony) See Algebraic  $K$ -theory, number theory, geometry and analysis. 85g:18001

$p$ -adic cohomology ★ Cohomologie  $p$ -adique. (French) [ $p$ -adic cohomology] 85i:14001

Algebraic  $K$ -theory, number theory, geometry and analysis ★ Algebraic  $K$ -theory, number theory, geometry and analysis. 85g:18001

Bielefeld ★ Algebraic  $K$ -theory, number theory, geometry and analysis. 85g:18001

Cohomology  $p$ -adique ★ Cohomologie  $p$ -adique. (French) [ $p$ -adic cohomology] 85i:14001

Conference:

Algebraic  $K$ -theory, number theory, geometry and analysis ★ Algebraic  $K$ -theory, number theory, geometry and analysis. 85g:18001

11AxX Elementary number theory {For analogues in number fields, see 11R04.}

11A05 Multiplicative structure; Euclidean algorithm; greatest common divisors

Cerasoli, Mauro (with Eugeni, Franco; Rizzi, Bruno) On the probability of the  $k$ -GCD of  $m$  randomly selected natural numbers. (Italian. English summary) 85b:11002

Cohen, Henri Diviseurs appartenant à une même classe résiduelle. [Divisors belonging to the same residue class] 85i:11002

Erdős, Paul (with Freud, Robert; Hegyvári, N.) Arithmetical properties of permutations of integers. 85d:11002

Eugeni, Franco See Cerasoli, Mauro; et al., 85b:11002

Freud, Robert See Erdős, Paul; et al., 85d:11002

Hegyvári, N. See Erdős, Paul; et al., 85d:11002

Li, Wen Ch'ing Winnie Determination of the residue classes of a polynomial at integral arguments. 85d:11003

Prodinger, Helmut A subword version of d'Ocagne's formula. 85b:11003

Rizzi, Bruno See Cerasoli, Mauro; et al., 85b:11002

Salte, Sadao Factorials of numbers in arithmetic sequence. (Japanese. English summary) 85e:11004

secondary classifications (11A05)

Fal'sev, R. F. Two criteria for the theory of prime  $k$ -twins connected with the generalized criterion for primes. (Russian) 85d:11010

Gereb-Graus, Mihály An extremal theorem on divisors of a number. 85g:05008

Purdy, G. B. A carry-free algorithm for finding the greatest common divisor of two integers. 85b:11026

Worley, R. T. Pairwise relatively prime solutions of linear Diophantine equations. 85b:11016

11A07 Congruences; primitive roots; residue systems

Bergmann, Horst Über eine Formel für primitive Kongruenzwurzeln. [On a formula for primitive congruence roots] 85d:11004

Blakley, G. R. (with Borosh, I.) Modular arithmetic of iterated powers. 85i:11003

Borosh, I. See Blakley, G. R., 85i:11003

Fabrykowski, J. Multidimensional covering systems of congruences. 85d:11005

Korec, Ivan Nonexistence of a small perfect rational cuboid. (Russian and Slovak summaries) 85i:11004

Li, Wei Chao A transference theorem concerning systems of linear congruences modulo natural numbers. (Chinese. English summary) 85b:11002

Oppenheim, A. The prisoner's walk: an exercise in number theory. 85m:11004

Popov, Yu. D. A method of solution of linear systems of congruences with one unknown. (Russian) 85d:11006

Ren, Jian Hua See Wang, Lian Xiang, (Not in MR)

Rotkiewicz, A. On the congruence  $2^{n-2} \equiv 1 \pmod{n}$ . 85e:11005

Schönheim, J. Covering congruences related to modular arithmetic and error correcting codes. 85d:11007

Schwarz, Stefan Extensions of Bauer's identical congruences. (Russian summary) 85c:11003

Sun, Qi On system of congruences. 85i:11005

On the solutions to a system of congruences. (Chinese) (Not in MR)

Wang, Lian Xiang (with Ren, Jian Hua) A transference theorem for linear congruence systems with a prime power as modulus. (Chinese) (Not in MR)

Wilson, Gregory L. Three enumeration problems for a congruence equation. 85c:11004

Yao, Qi On a conjecture of Chowla. (Chinese) 85g:11010

secondary classifications (11A07)

(Buhler, J. P.) See Keller, Wilfrid, 85b:11119

(Crandall, R. E.) See Keller, Wilfrid, 85b:11119

Croas, James T. The Euler  $\varphi$ -function in the Gaussian integers. 85c:11006

Hudson, Richard H. (with Williams, Kenneth S.) Binomial coefficients and Jacobi sums. 85m:11002

Keller, Wilfrid Corrigendum: "Primes of the form  $n! \pm 1$  and  $2 \cdot 3 \cdot 5 \cdots p \pm 1$ " [Math. Comp. 38 (1982), no. 158, 639-643; MR 83c:10006] by J. P. Buhler, R. E. Crandall and M. A. Penk. 85b:11119

Lagaras, J. C. Sets of primes determined by systems of polynomial congruences. 85f:11081

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## secondary classifications (11B37)

- Antoniadis, Jannis A. Über die Periodenlänge mod  $p$  einer Klasse rekursiver Folgen. [On the period length mod  $p$  of a class of recursive sequences] 85k:11056
- Cerlienco, Luigi (with Delogu, G.; Piras, Francesco) Second-order linear recurrence sequences and some of their applications. (Italian. English summary) 85b:30006
- Delogu, G. See Cerlienco, Luigi; et al., 85b:30006
- Kiss, P. (with Molnár, Sándor) On distribution of linear recurrences modulo 1. 85k:11033
- Landman, Bruce See Layman, J. W., 85j:39002
- Layman, J. W. (with Landman, Bruce) Note on the local growth of iterated polynomials. 85j:39002
- Molnár, Sándor See Kiss, P., 85k:11033
- Perelli, A. (with Zannier, U.) On recurrent mod  $p$  sequences. 85g:11012
- Patil, S. A. See Uppuluri, V. R. R., (Not in MR)
- Piras, Francesco See Cerlienco, Luigi; et al., 85b:30006
- Stewart, C. L. On divisors of Fermat, Fibonacci, Lucas and Lehmer numbers. III. 85g:11021
- Uppuluri, V. R. R. (with Patil, S. A.) Waiting times and generalized Fibonacci sequences. (Not in MR)
- Zannier, U. See Perelli, A., 85g:11012

## 11B39 Fibonacci and Lucas numbers and polynomials

- Baica, Malvina  $n$ -dimensional Fibonacci numbers and their applications. 85f:11010
- Bisht, C. S. Some congruence properties of generalized Lucas integral sequences. 85m:11009
- Dodd, Fred The number field  $\mathbb{Q}(\sqrt{5})$  and the Fibonacci numbers. 85e:11014
- Du, Zhao Wei The probability properties of generalized Fibonacci sequences. (Chinese) (Not in MR)
- Er, M. C. The matrices of Fibonacci numbers. 85k:11009
- Sums of Fibonacci numbers by matrix methods. 85m:11010
- Erlbach, Lee (with Vélez, William Ylas) Equiprobability in the Fibonacci sequence. 85b:11012
- Georgiou, Costas See Philippou, Andreas N.; et al., 85c:11019
- Heed, Joseph J. Wieferichs and the problem  $z(p^2) = z(p)$ . 85m:11011
- Josef, Sana Lucas triangle. 85j:11025
- Kapur, J. N. Generalised Fibonacci polynomials. 85c:11018
- Ligomenides, P. (with Newcomb, R. W.) Multilevel Fibonacci conversion and addition. 85j:11026
- Morgan, Carolyn A. The Fibonacci sequence  $F_n$  modulo  $L_m$ . 85b:11013
- Newcomb, R. W. See Ligomenides, P., 85j:11026
- Pethő, S. On Lucas polynomials and some summation formulas for Chebyshev polynomial sequences via them. 85d:11020
- Pethő, Árpád Full cubes in the Fibonacci sequence. 85j:11027
- Philippou, Andreas N. (with Georgiou, Costas; Philippou, George N.) Fibonacci polynomials of order  $k$ , multinomial expansions and probability. 85c:11019
- Philippou, George N. See Philippou, Andreas N.; et al., 85c:11019
- Popov, Blagoj On certain series of reciprocals of Fibonacci numbers. 85m:11012

- Robbins, Neville On Fibonacci numbers of the form  $pr^2$ , where  $p$  is prime. 85b:11014
- On Fibonacci numbers which are powers. II. 85m:11013
- Schoen, Robert Harmonic, geometric, and arithmetic means in generalized Fibonacci sequences. (Not in MR)
- Stewart, C. L. On divisors of Fermat, Fibonacci, Lucas and Lehmer numbers. III. 85g:11021
- St. John, Peter H. On the asymptotic proportions of zeros and ones in Fibonacci sequences. 85f:11011
- Thomson, W. E. The "super-Fibonacci" sequence. (Not in MR)
- Vélez, William Ylas See Erlbach, Lee, 85b:11012

## secondary classifications (11B39)

- Antoniadis, Jannis A. Über die Kennzeichnung zweiklassiger imaginär-quadratischer Zahlkörper durch Lösungen diophantischer Gleichungen. [On the characterisation of two-class imaginary quadratic number fields via the solutions of Diophantine equations] 85g:11008
- Arce, Gonzalo R. Fibonacci and related sequences in digital filtering. (Not in MR)
- Bicknell-Johnson, Marjorie See Hoggatt, V. E., Jr., 85f:11006
- Er, M. C. Computing sums of order- $k$  Fibonacci numbers in log time. 85b:11124
- Fraenkel, Aviezri S. Wythoff games, continued fractions, cedar trees and Fibonacci searches. 85d:68030
- Hoggatt, V. E., Jr. (with Bicknell-Johnson, Marjorie) Additive partitions of the positive integers and generalized Fibonacci representations. 85f:11006
- Lin, Pin Yen The general solution to the decimal fraction of Fibonacci series. 85j:11015
- Malik, H. N. On the solution of  $\{E^2 + (\lambda p - 2)E + (1 - \lambda p - \lambda^2 q)\}^m G_n = n^k$ , by expansions and operators. 85c:30003
- Martin, Alain J. (with Rem, M.) A presentation of the Fibonacci algorithm. 85m:11093
- Phillips, G. M. Aitken sequences and Fibonacci numbers. 85b:65013
- Rem, M. See Martin, Alain J., 85m:11093
- Rosenberger, Gerhard On some divisibility properties of Fibonacci and related numbers. 85e:11013
- Shorey, T. N. Linear forms in members of a binary recursive sequence. 85m:11038

11B50 Sequences (mod  $m$ )

## secondary classifications (11B50)

- Jennings, S. M. Multiplexed sequences: some properties of the minimum polynomial. 85b:94012
- Sárközy, A. On quasi-uniform distribution of sequences of integers. 85m:11057
- 11B65 Binomial coefficients; factorials;  $q$ -identities
- Erdős, Paul On prime factors of binomial coefficients. II. (Hungarian) 85f:11012
- Lou, Shi Tuo (with Yao, Qi) Conjecture of Chowla-Cowles on Apéry numbers. (Chinese) (Not in MR)
- Yao, Qi See Lou, Shi Tuo, (Not in MR)

## secondary classifications (11B65)

- Feigin, B. L. Cohomology of contact Lie algebras. (Russian) 85b:17012
- Hudson, Richard H. (with Williams, Kenneth S.) Binomial coefficients and Jacobi sums. 85m:11092
- Williams, Kenneth S. See Hudson, Richard H., 85m:11092

## 11B68 Bernoulli and Euler numbers and polynomials

- Dilcher, Karl Irreducibility and zeros of generalized Bernoulli polynomials. 85k:11010
- Ernvall, Reijo Generalized irregular primes. 85g:11022
- Gessel, Ira M. Some congruences for generalized Euler numbers. 85f:11013
- Joly, J.-R. Calcul des nombres de Bernoulli modulo  $p^m$ . [Calculation of Bernoulli numbers modulo  $p^m$ ] 85g:11023
- Porubský, Štefan Further congruences involving Bernoulli numbers. 85b:11015
- Voronoi's congruence via Bernoulli distributions. 85g:11024
- Rai, B. K. See Singh, Surya Narain; et al., 85b:11016
- Singh, Surya Narain (with Singh, V. P.; Rai, B. K.) A characterisation of some extended Bernoulli and Euler polynomials. (Hindi. English summary) 85b:11016
- Singh, V. P. See Singh, Surya Narain; et al., 85b:11016

## secondary classifications (11B68)

- Forrester, P. J. Extensions of several summation formulae of Ramanujan using the calculus of residues. 85i:40004
- Getu, Seyoum See Shapiro, Louis W.; et al., 85d:05020
- Keller, Wilfrid (with Löh, Günter) The criteria of Kummer and Mirimanoff extended to include 22 consecutive irregular pairs. 85b:11014
- Löh, Günter See Keller, Wilfrid, 85b:11014
- Nowak, Werner-Georg An analogue to a conjecture of S. Chowla and H. Walum. 85m:11056
- Shapiro, Louis W. (with Woan, Wen Jin; Getu, Seyoum) Runs, slides and moments. 85d:05020
- Woan, Wen Jin See Shapiro, Louis W.; et al., 85d:05020

## 11B73 Bell and Stirling numbers

- Berndt, Bruce C. (with Evans, Ronald J.; Wilson, B. M.) Chapter 3 of Ramanujan's second notebook. 85c:11020
- Evans, Ronald J. See Berndt, Bruce C.; et al., 85c:11020
- Wilson, B. M. See Berndt, Bruce C.; et al., 85c:11020



## secondary classifications (11B73)

- Bellavista, Luciana Vianelli On the Stirling numbers of the first kind arising from probabilistic and statistical problems. 85d:05013
- Broder, Andrei Z. The  $r$ -Stirling numbers. 85i:05010
- Cacoullos, T. (with Papageorgiou, H.) Multiparameter Stirling and  $C$ -numbers: recurrences and applications. 85m:05005
- Malik, H. N. On the solution of  $\{E^2 + (\lambda p - 2)E + (1 - \lambda p - \lambda^2 q)\}^m G_n = n^k$ , by expansions and operators. 85c:39003
- Niederhausen, H. Stirling number representation problems. 85f:05012
- Ouyang, Zhi Cayley-Xu numbers, Carlitz numbers, and a refinement of an asymptotic expansion for  $\Delta^n O^{n+k}$ . (Chinese. English summary) 85b:05009
- Papageorgiou, H. See Cacoullos, T., 85m:05005
- Parthasarathy, K. V. See Vasudevan, R.; et al., 85c:60013
- Rai, B. K. (with Singh, Surya Narain; Singh, V. P.) Some identities for Stirling numbers. (Hindi. English summary) 85b:05023
- Singh, Surya Narain See Rai, B. K.; et al., 85b:05023
- Singh, V. P. See Rai, B. K.; et al., 85b:05023
- Vasudevan, R. (with Vittal, P. R.; Parthasarathy, K. V.) Combinants, Bell polynomials and applications. 85c:60012
- Vittal, P. R. See Vasudevan, R.; et al., 85c:60012

## 11B75 Other combinatorial number theory

## secondary classifications (11B75)

- Erdős, Paul (with Larson, Jean A.) On pairwise balanced block designs with the sizes of blocks as uniform as possible. 85m:05012
- Hilton, Peter (with Pedersen, Jean) Regular polygons, star polygons and number theory. 85i:51028
- Larson, Jean A. See Erdős, Paul, 85m:05012
- Pedersen, Jean See Hilton, Peter, 85i:51028
- Simion, Rodica A multi-indexed Sturm sequence of polynomials and unimodality of certain combinatorial sequences. 85e:05015

## 11B83 Other special sequences and polynomials

- Clarke, J. H. (with Shannon, A. G.) Some aspects of Carmichael numbers. 85e:11015
- Dibag, I. An analogue of the von Staudt-Clausen theorem. 85j:11028
- Hayasaka, Takanori See Saito, Sadao, 85g:11025
- Heldrich, Arnold J. J. On the factorization of Eulerian polynomials. 85m:11014
- Iskii, Kiyoshi Note on Kaprekar's constant. 85j:11029
- von Koch, Hans Elementary proof of unimodality in Gauss polynomials. (Italian) 85e:11016
- Leeming, D. J. (with MacLeod, R. A.) Generalized Euler number sequences: asymptotic estimates and congruences. 85c:11021
- MacLeod, R. A. See Leeming, D. J., 85c:11021
- Maler, W. Fareysche Folgen und Sektorengitter. [Farey sequences and sector lattices] 85e:11017
- McIntosh, Richard A necessary and sufficient condition for the primality of Fermat numbers. 85c:11022
- Ozeki, K. A certain property of polynomials. 85c:11023
- Rusev, Nedko S.  $k$ -power-free sequences. (Bulgarian. English summary) 85k:11011
- Saito, Sadao (with Hayasaka, Takanori) Supplement to: "Corrections to: 'A perfect  $(s, n)$ -sequence based on the quadratic  $F(k, i)$ ' and 'A perfect  $(s, n)$ -sequence based on  $F(k, i)''$ " [Res. Rep. Miyagi Tech. College No. 17 (1981), 123-129; MR 83a:10016]. 85g:11025
- Selleck, John H. Powers of  $T$  and Soddy circles. 85f:11014
- Shannon, A. G. See Clarke, J. H., 85e:11015

## secondary classifications (11B83)

- Berndt, Bruce C. Chapter 6 of Ramanujan's second notebook. 85d:01022
- Bollinger, Richard C. Fibonacci  $k$ -sequences, Pascal- $T$  triangles, and  $k$ -in-a-row problems. 85j:11013
- Games, Richard A. A generalized recursive construction for de Bruijn sequences. 85h:94036
- Kresová, Helena (with Šalát, Tibor) On palindromic numbers. (Russian and Slovak summaries) 85g:11016
- Lavoie, J.-L. See Srivastava, Hari M.; et al., 85g:33010
- Mikhailov, I. I. A property of figurate numbers. (Russian) 85c:11027
- Nair, Mohan  $B_n[g]$ -sequences. 85j:11016
- Rai, B. K. (with Singh, Surya Narain) On the extension of Bernoulli and Euler polynomials. 85a:33018
- Šalát, Tibor See Kresová, Helena, 85g:11016
- Shiga, Kōji Discrete structures and van der Waerden sets. 85h:58005b
- Singh, Surya Narain See Rai, B. K., 85a:33018
- Srivastava, Hari M. (with Lavoie, J.-L.; Tremblay, R.) A class of addition theorems. 85g:33010
- Tremblay, R. See Srivastava, Hari M.; et al., 85g:33010
- Yao, Qi On a conjecture of Chowla. (Chinese) 85g:11010

## 11B99 None of the above, but in this section

## secondary classifications (11B99)

- Fabrykowski, J. Multidimensional covering systems of congruences. 85d:11005

## 11Cxx Polynomials and matrices

## 11C08 Polynomials [See also 13F20.]

- Ahmad, Sarwar Nasseeruddin Roots of equation of any degree. 85f:11015
- Bombieri, E. On a problem of Tu concerning divisibility of polynomials. 85h:11009
- Desimirova, L. K. Some theorems on the irreducibility of a class of integer polynomials of Schur type. (Russian) 85d:11021
- Lauer, Markus Generalized  $p$ -adic constructions. 85c:11024
- Wang, Shi Qiang A class of commutative rings with a prime number formula. (Chinese) (Not in MR)

## secondary classifications (11C08)

- Car, Mireille Sommes de carrés dans  $F_q[X]$ . [Sums of squares in  $F_q[X]$ ] 85i:11102
- Kaltofen, Erich (with Musser, David R.; Saunders, B. David) A generalized class of polynomials that are hard to factor. 85a:12001
- Klein, Rolf Über Hilbertsche Körper. [On Hilbertian fields] 85b:12004
- Li, Wen Ch'ing Winnie Determination of the residue classes of a polynomial at integral arguments. 85d:11003
- Loos, Rüdiger Computing rational zeros of integral polynomials by  $p$ -adic expansion. 85b:11123
- Musser, David R. See Kaltofen, Erich; et al., 85a:12001
- Plaisted, David A. New NP-hard and NP-complete polynomial and integer divisibility problems. 85j:68043
- Saunders, B. David See Kaltofen, Erich; et al., 85a:12001
- Uchiyama, Saburō (with Yoninaga, Masataka) On the difference  $f^3(x) - g^2(x)$ . 85a:12004
- Yoninaga, Masataka See Uchiyama, Saburō, 85a:12004
- Zaupper, T. A note on unique factorization in imaginary quadratic fields. 85h:11058

## 11C20 Matrices, determinants [See also 15A36.]

- Narang, Asha Arithmetic of matrices over Dedekind domains. 85h:11010
- Ruh, David E. The equation  $X^k + Y^k = Z^k$  in commuting rational matrices. 85c:11025

## secondary classifications (11C20)

- Okada, S. Generalized Maillet determinant. 85j:11147
- Wang, Kai On Maillet determinant. 85m:11072

## 11Dxx Diophantine equations [See also 14Gxx.]

- Sprindshuk, V. G. ★Классические диофантовы уравнения от двух неизвестных. (Russian) [Classical Diophantine equations in two unknowns] 85d:11022

## secondary classifications (11Dxx)

- Bashmakova, I. G. (with Slavutin, E. I.) ★История диофантова анализа. (Russian) [History of Diophantine analysis] 85m:01004
- (Diophantus of Alexandria) See Bashmakova, I. G., 85m:01004
- (de Fermat, Pierre) See Bashmakova, I. G., 85m:01004
- Lang, Serge ★Fundamentals of Diophantine geometry. 85j:11005
- Slavutin, E. I. See Bashmakova, I. G., 85m:01004
- Biography:  
Diophantus of Alexandria See Bashmakova, I. G., 85m:01004
- de Fermat, Pierre See Bashmakova, I. G., 85m:01004

## 11D04 Linear equations

- Hindin, Harvey J. Stars, hexes, triangular numbers, and Pythagorean triples. (Not in MR)
- Samsonadze, È. T. Formulas for the number of nonnegative integer solutions of the linear Diophantine equation and inequality. (Russian. English and Georgian summaries) 85h:11011
- Shevchenko, V. N. The exchange problem, the Frobenius problem and the group minimization problem. (Russian) 85j:11030
- Silverman, Joseph H. The  $S$ -unit equation over function fields. 85e:11018
- Worley, R. T. Pairwise relatively prime solutions of linear Diophantine equations. 85f:11016

## secondary classifications (11D04)

- Jones, Charles A. Using linear forms to determine the set of integers realizable by  $(g_0, g_1, \dots, g_n)$ -trees. 85g:68056
- Takigawa, Nobumasa (with Watanabe, Mamoru) Linear Diophantine equations which characterize compact Riemann surfaces with an automorphism group of order  $2^m$ . 85e:14038a
- Compact Riemann surfaces with cyclic automorphism groups. 85e:14038b
- Watanabe, Mamoru See Takigawa, Nobumasa, 85e:14038a

## 11D09 Quadratic and bilinear equations

- Andreescu, Titu (with Andrica, Dorin) Conditions under which the numbers  $an + b$  and  $cn + d$  are simultaneously perfect squares. (Romanian) 85c:11026
- Andrica, Dorin See Andreescu, Titu, 85c:11026
- Cohn, J. H. E. A problem of Sierpiński. 85i:11020
- Colliot-Thélène, Jean-Louis (with Sansuc, Jean-Jacques; Swinnerton-Dyer, Peter) Intersections of deux quadriques et surfaces de Châtelet. (English summary) [Intersections of two quadrics and Châtelet surfaces] 85j:11031
- Davies, H. B. On generating solutions of the Diophantine equation  $x^2 + y^2 = u^2 + v^2$ . 85i:11021
- Fomenko, O. M. Some Diophantine systems. (Russian) 85b:11017
- Fraedrich, Anna Maria Über fast-gleichschenklige pythagoreische Dreiecke. [On almost-isosceles Pythagorean triangles] 85b:11018

- Gao, Hong On the explicit representation of the general solution of the Diophantine equation  $x^2 + y^2 = z^2$  in terms of any particular solution. (Chinese. English summary) 85b:11012
- Hudson, Richard H. Class numbers of imaginary cyclic quartic fields and related quaternary systems. 85b:11012
- Mikhailov, I. I. A property of figurate numbers. (Russian) 85c:11027
- Mohanty, S. P. (with Ramasamy, A. M. S.) The simultaneous Diophantine equations  $x^2 + x + 1 = 3z$ ,  $y^2 + y + 1 = 3z^2$  and a generalisation of a theorem of A. Brauer. 85b:11019
- (with Ramasamy, A. M. S.) The simultaneous Diophantine equations  $5y^2 - 20 = X^2$  and  $2y^2 + 1 = Z^2$ . 85b:11013
- Pei, Ding Yi The number of solutions of the indeterminate equation  $ax^2 + by^2 + cz^2 = n$ . (Chinese) (Not in MR)
- The number of solutions for the Diophantine equation  $ax^2 + by^2 + cz^2 = n$ . 85b:11013
- Ramasamy, A. M. S. See Mohanty, S. P., 85b:11019 and 85b:11013
- Sansuc, Jean-Jacques See Colliot-Thélène, Jean-Louis; et al., 85j:11031
- Swinnerton-Dyer, Peter See Colliot-Thélène, Jean-Louis; et al., 85j:11031

secondary classifications (11D09)

- Eckert, Ernest J. The group of primitive Pythagorean triangles. 85a:51017
- Golubeva, E. P. Asymptotic distribution of lattice points, belonging to given residue classes, on hyperboloids of a special type. (Russian) 85c:11076
- Klostermair, Albert (with Lüneburg, Heinz) Ein Algorithmus zur Berechnung der größten Ganzen aus Wurzel  $d$ . [An algorithm for computing the greatest integer part of the square root of  $d$ ] 85f:11095
- Lüneburg, Heinz See Klostermair, Albert, 85f:11095
- Pen, A. S. A criterion for binary quadratic forms. (Russian) 85b:11020
- Yokoi, Hideo On the Diophantine equation  $x^2 - py^2 = \pm 4q$  and the class number of real subfields of a cyclotomic field. 85b:11098

# 11D25 Cubic and quartic equations

- Boyarsky, Abraham See Scarowsky, Manny, 85c:11029
- Bremner, Andrew (with Tzanakis, Nicholas) Integer points on  $y^2 = x^3 - 7x + 10$ . 85c:11028
- (with Cassels, J. W. S.) On the equation  $Y^2 = X(X^2 + p)$ . 85f:11017
- Cao, Zhen Fu On the Diophantine equations  $x^2 + 1 = 2y^2$ ,  $x^2 - 1 = 2Dz^2$ . (Chinese. English summary) 85j:11032
- Cassels, J. W. S. See Bremner, Andrew, 85f:11017
- Chahal, Jasbir Singh On an identity of Desboves. 85m:11015
- Chowla, S. (with Cowles, John R.; Cowles, M.) On  $Y^2 = X^3 + k$  and the Thue rank of cubic curves. 85b:11020
- Cohn, J. H. E. Squares in arithmetical progressions. I, II. 85d:11023
- Cowles, John R. See Chowla, S.; et al., 85b:11020
- Cowles, M. See Chowla, S.; et al., 85b:11020
- Ke, Zhao (with Sun, Qi) On the Diophantine equation  $x^4 - 2py^2 = 1$ . (Chinese. English summary) 85a:11006
- Lang, Serge Conjectured Diophantine estimates on elliptic curves. 85d:11024
- Leung, Ka Hin Bounds for integral solutions of diagonal cubic equations. 85b:11021
- Makowski, Andrzej A cubic identity and its consequences. 85b:11022
- Mohanty, S. P. (with Ramasamy, A. M. S.) On the positive integral solutions of the Diophantine equation  $x^3 + by + 1 - xyz = 0$  ( $b > 0$ ). 85m:11016
- Ramasamy, A. M. S. See Mohanty, S. P., 85m:11016
- Scarowsky, Manny (with Boyarsky, Abraham) A note on the Diophantine equation  $x^n + y^n + z^n = 3$ . 85c:11029
- On units of certain cubic fields and the Diophantine equation  $x^3 + y^3 + z^3 = 3$ . 85c:11022
- Stroecker, R. J. How to solve a Diophantine equation—a number-theoretic excursion. 85i:11023
- Sun, Qi See Ke, Zhao, 85a:11006
- Tzanakis, Nicholas The complete solution in integers of  $x^3 + 3y^3 = 2^n$ . 85k:11014
- See also Bremner, Andrew, 85c:11028
- Zajta, Aurel J. Solutions of the Diophantine equation  $A^4 + B^4 = C^4 + D^4$ . 85d:11025
- Zhang, Ming Zhi On the Diophantine equation  $x^4 + kx^2y^2 + y^4 = z^2$ . (Chinese. English summary) 85c:11019

secondary classifications (11D25)

- Antoniadis, Jannis A. Über die Kennzeichnung zweiklassiger imaginär-quadratischer Zahlkörper durch Lösungen diophantischer Gleichungen. [On the characterization of two-class imaginary quadratic number fields via the solutions of Diophantine equations] 85g:11098
- Everaë, J.-H. On the representation of integers by binary cubic forms of positive discriminant. 85c:11026a
- Erratum: "On the representation of integers by binary cubic forms of positive discriminant". 85c:11026b
- Kato, Goro C. On the generators of the first homology with compact supports of the Weierstrass family in characteristic zero. 85c:14062
- Laska, Michael ★ Elliptic curves over number fields with prescribed reduction type. 85j:11064
- Nakamura, Tetsuo On Shimura's elliptic curve over  $\mathbb{Q}(\sqrt{29})$ . 85i:11051
- Satgé, P. Une généralisation du calcul de Selmer. [A generalization of Selmer's calculation] 85g:11046
- Silverman, Joseph H. Representations of integers by binary forms and the rank of the Mordell-Weil group. 85f:11022
- Tunell, J. B. A classical Diophantine problem and modular forms of weight  $3/2$ . 85d:11046

# 11D41 Higher degree equations; Fermat's equation

- Brinda, B. On  $S$ -integral solutions of the equation  $y^m = f(x)$ . 85m:11017
- Cugiani, Marco Indeterminate analysis and continued fractions. (Italian) 85f:11018
- Everaë, J.-H. ★ Upper bounds for the numbers of solutions of Diophantine equations. 85c:11015
- Faltings, Gerd Endlichkeitsätze für abelsche Varietäten über Zahlkörpern. [Finiteness theorems for abelian varieties over number fields] 85g:11026a
- Erratum: "Finiteness theorems for abelian varieties over number fields". (German) 85g:11026b
- Die Vermutungen von Tate und Mordell. [The conjectures of Tate and Mordell] 85c:11020
- Filaseta, Michael An application of Faltings' results to Fermat's last theorem. 85c:11030
- Hao, Fred H. (with Parry, Charles J.) The Fermat equation over quadratic fields. 85j:11033
- Hilliker, David Lee (with Straus, E. G.) Determination of bounds for the solutions to those binary Diophantine equations that satisfy the hypotheses of Runge's theorem. 85c:11031
- Iliev, Valentin (with Taanov, Vasil) The solution of Mordell's problem obtained by G. Faltings. (Bulgarian) (See 85c:00015)
- Kelenos, József Solution of the Diophantine equation  $ax^{2m} + by^{2n} + cz^2 + dt^2 = 0$  in case  $\sqrt{abcd}$  is a rational number. (Hungarian) 85d:11026
- Keller, Wilfrid (with Löh, Günter) The criteria of Kummer and Mirimanoff extended to include 22 consecutive irregular pairs. 85b:11014
- Khuisid, A. A. Some corollaries of Mordell's conjecture. (Russian) 85d:11027
- Le, Mao Hua On the generalized Ramanujan-Nagell equation. I. (Chinese) (Not in MR)
- Löh, Günter See Keller, Wilfrid, 85b:11014
- Olson, Loren D. Mordell-Faltings' theorem. (Norwegian. English summary) 85j:11034
- Parry, Charles J. See Hao, Fred H., 85j:11033
- Powell, Barry J. A Diophantine equation. 85c:11021
- Proof of the impossibility of the Fermat equation  $X^p + Y^p = Z^p$  for special values of  $p$  and of the more general equation  $bX^m + cY^n = dZ^n$ . 85c:11032
- Ribenholm, Paulo The work of Kummer on Fermat's last theorem. 85d:11028
- Rollero, Aldo An observation on Fermat's last theorem. (Italian. English and French summaries) 85i:11024
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- Zhou, Guo Fu (with Kang, Ji Ding) On the Diophantine equation  $\sum_{k=1}^m k^n = (m+1)^n$ . 85m:11020

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Vardulakis, A. I. G. Proper rational matrix Diophantine equations and the exact model matching problem. 85e:93016

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Brieskorn, E.  $\star$  Die Milnorgitter der exzeptionellen unimodularen Singularitäten. (German) [The Milnor lattices of exceptional unimodal singularities] 85k:32014

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## 11E12 Quadratic forms over global rings and fields

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Cox, David A. (with Parry, Walter R.) Genera of congruence subgroups in  $Q$ -quaternion algebras. 85i:11029

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## 11E41 Class numbers of quadratic and Hermitian forms

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Hashimoto, Ki-ichiro (with Ibukiyama, Tomoyoshi) On class numbers of positive definite binary quaternion Hermitian forms. III. 85i:11030

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Belova, N. N. The arithmetic of Pell orders and representations of numbers by some ternary quadratic forms. (Russian) 85d:11031

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- Lomadse, G. A. Cusp forms of prime level of Nebentypus. II. (Russian) **85i:11037**  
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# 11E57 Classical groups [See also 14Lxx, 20Gxx.]

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 James, G. J. Orthogonal groups of some trace forms. **85i:11031**  
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 Zhang, Yong Zheng Automorphisms of  $\text{PO}_n(V)$  over a local ring  $R$ . (Chinese. English summary) **85c:11039**

## secondary classifications (11E57)

- Adamovich, A. M. An analogue of the space of primitive forms over a field of positive characteristic. (Russian) **85d:20033**  
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 Cao, Xi Hao (with Zhang, Yi Min) Automorphisms of the two-dimensional linear groups over a class of Euclidean rings. (Chinese. English summary) **85h:20047**  
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 Conway, John H. The automorphism group of the 26-dimensional even unimodular Lorentzian lattice. **85k:11030**  
 Cox, David A. (with Parry, Walter R.) Genera of congruence subgroups in  $Q$ -quaternion algebras. **85i:11029**  
 Ellers, E. W. (with Frank, Rolfdieter; Nolte, W.) Bireflectionality of the weak orthogonal and the weak symplectic groups. **85i:11027**  
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 Kamiya, Shigeyasu Notes on nondiscrete subgroups of  $\hat{U}(1, n; F)$ . **85f:20042**  
 Kaplan, Arnold G. Composition of quadratic forms in geometry and analysis: some recent applications. (See **85k:11001**)  
 Karoubi, M. Homology of the infinite orthogonal and symplectic groups over algebraically closed fields. **85h:18008b**  
 King, Oliver H. Imprimitve maximal subgroups of the orthogonal, special orthogonal, unitary and special unitary groups. **85d:20036**  
 Lacroix, N. H. J. (with Levesque, C.) Sur les sous-groupes normaux de  $\text{SL}_2$  sur un anneau local. [On the normal subgroups of  $\text{SL}_2$  over a local ring] **85b:11037**  
 Levesque, C. See Lacroix, N. H. J., **85b:11037**  
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 Lin, Gong Yuan Automorphisms of  $\text{PSL}_n(V)$  over local rings. (Chinese. English summary) **85i:20048**  
 Liu, Yun Ying (with Zhang, Yi Min; Cao, Xi Hao) Automorphisms of the two-dimensional linear groups over a Euclidean ring. (Chinese. English summary) **85j:20045**  
 Nolte, W. See Ellers, E. W.; et al., **85i:11027**  
 Parry, Walter R. (with Sah, Chih Han) Third homology of  $\text{SL}(2, R)$  made discrete. **85f:20043**  
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 You, Hong (with Wang, Ren Fa) Automorphisms of two-dimensional linear groups over semilocal rings. (Chinese) **85i:20050b**  
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# 11E72 Galois cohomology of linear algebraic groups [See also 20G10.]

- Mathies, Philippe Le principe de Hasse et les groupes semi-simples. I. [The Hasse principle and semisimple groups. I] **85f:11026**

# 11E76 Forms of degree higher than two

- Baker, R. C. Petites solutions des congruences. [Small solutions of congruences] **85m:11026**  
 Carlson, Renate Witttringe höherer Stufe. [Higher-level Witt rings] **85d:11037**  
 Evertse, J.-H. On the representation of integers by binary cubic forms of positive discriminant. **85c:11026a**  
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 Feng, Ke Qin On positive semidefinite forms that are not sums of squares of polynomials. (Chinese) (Not in MR)  
 Orzech, Morris Forms of low degree in finite fields. **85j:11046**  
 Raghavan, Srinivasacharya Values of indefinite quadratic forms. **85j:11047**  
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## secondary classifications (11E76)

- Dixmier, Jacques Série de Poincaré et systèmes de paramètres pour les invariants des formes binaires. [Poincaré series and systems of parameters for invariants of binary forms] **85f:14050**  
 Goldman, Jay R. Numbers of solutions of congruences: Poincaré series for strongly nondegenerate forms. **85d:11105**  
 Heath-Brown, D. R. Cubic forms in ten variables. **85b:11025**  
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# 11E81 Algebraic theory of quadratic forms; Witt groups and rings

- Bergé, Anne-Marie (with Martinet, Jacques) Formes quadratiques et extensions en caractéristique 2. [Quadratic forms and extensions in characteristic 2] (See **85g:11009**)  
 Cibils, Claude Groupe de Witt d'une algèbre avec involution. [Witt group of an algebra with involution] **85c:11041a**  
 Elman, Richard (with Lam, Tait Yuen; Tignol, Jean-Pierre; Wadsworth, Adrian R.) Witt rings and Brauer groups under multiquadratic extensions. I. **85i:11032**  
 Fitzgerald, Robert W. Witt kernels of function field extensions. **85d:11038**  
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 Kahn, Bruno Extensions algébriques et formes quadratiques. [Algebraic extensions and quadratic forms] (See **85g:11009**)  
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 Lewis, D. W. Exact sequences of Witt groups of equivariant forms. **85c:11041b**  
 Some canonical pairings of Witt groups of forms. **85d:11039**  
 An exact square of graded modules over a graded Witt ring. **85h:11023**  
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 Cancellation of quadratic forms over polynomial rings. **85k:11016**  
 Schulte-Pillot, Rainer Darstellungsmaße von Spinorgeschlechtern ternärer quadratischer Formen. [Representation measures of spinor genera of ternary quadratic forms] **85m:11027**  
 Shapiro, Daniel B. (with Tignol, Jean-Pierre; Wadsworth, Adrian R.) Witt rings and Brauer groups under multiquadratic extensions. II. **85i:11033**  
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 Ware, Roger Quadratic forms and pro 2-groups. II. The Galois group of the Pythagorean closure of a formally real field. **85f:11028**  
 You, Hong On the solution to a question of D. G. James. (Chinese. English summary) **85d:11041**

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- Bayer-Fluckiger, Eva (with Stoltzfus, Neal W.) Indecomposable knots and concordance. **85e:57023**  
 Bröcker, Ludwig Positivbereiche in kommutativen Ringen. [Positivity domains in commutative rings] **85c:13004**  
 Brieskille, Julius Spinor class groups of orders. **85c:11117**  
 Carlson, Renate Witttringe höherer Stufe. [Higher-level Witt rings] **85d:11037**  
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 Fiedler, Thomas Eine Kongruenz für Gitter und ihre Anwendung auf 2k-Mannigfaltigkeiten in 4k-Mannigfaltigkeiten. (English summary) [A congruence for lattices and their application to 2k-manifolds in 4k-manifolds] **85e:57045**  
 Kersten, Ina (with Michalíček, Johannes) Eine Charakterisierung der reellen Abschlässe von semilokalen Ringen. [A characterization of the real closures of semilocal rings] **85d:13003**  
 Kula, M. (with Marshall, Murray A.; Sladek, A.) Direct limits of finite spaces of orderings. **85f:11023**  
 Lam, Tait Yuen ★ Orderings, valuations and quadratic forms. **85e:11024**

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11E88 Quadratic spaces; Clifford algebras [See also 15A63, 15A66.]

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Parimala, Raman (with Sridharan, Raman) Indecomposable rank 4 quadratic spaces of nontrivial discriminant over polynomial rings. 85b:11035

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Verahik, A. M. Quadratic forms that are positive on the cone, and quadratic duality. (Russian. English summary) 85h:90134

11E95  $p$ -adic theory

Báyer Isant, Pilar Quadratic forms over totally  $P$ -adic fields. (Spanish) 85k:11018

Brownawell, W. Dale On  $p$ -adic zeros of forms. 85k:11019

Kitaoka, Yoshiyuki A note on local densities of quadratic forms. 85e:11029

Schmidt, Wolfgang M. The solubility of certain  $p$ -adic equations. 85m:11028

11E99 None of the above, but in this section

secondary classifications (11E99)

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11Fxx Discontinuous groups and automorphic forms [See also 11R39, 11S37, 14Gxx, 14Kxx, 22E50, 22E55, 30F35, 32Nxx; for relations with quadratic forms, see 11E45.]

(Borovoi, M. V.) See Automorphic forms, representations and  $L$ -functions. 85g:11033  
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11F03 Modular and automorphic functions

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Cohen, Paula On the coefficients of the transformation polynomials for the elliptic modular function. 85k:11020

Ishii, Noburo Construction of generators of modular function fields. 85k:11021

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Mahler, Kurt On the analytic solution of certain functional and difference equations. 85e:30041

Meyer, Curt Automorphe Funktionen und Zahlentheorie. [Automorphic functions and number theory] 85a:11022

Proskurin, N. V. Expansion of automorphic functions on  $SL_3(C)/SU(3)$ . (Russian) 85j:11059

Scherz, Reinhard Eine Bemerkung zu einer Arbeit von C. Meyer über imaginär-quadratische Körper mit der Klassenzahl 2. [Comment on a work of C. Meyer on imaginary quadratic fields with class number 2] 85b:11064

Venkov, A. B. Spectral theory of automorphic functions. (Russian) 85j:11060a  
Spectral theory of automorphic functions. 85j:11060b

11F06 Structure of modular groups and generalizations; arithmetic groups [See also 20H05, 20H10, 22E40.]

Flöge, Dieter Zur Struktur der  $PSL_2$  über einigen imaginär-quadratischen Zahlringen. [On the structure of  $PSL_2$  over some imaginary quadratic number rings] 85c:11043

Gilman, Jane Structures of elliptic irreducible subgroups of the modular group. 85g:11035

Higman, G. (with Mushtaq, Q.) Coset diagrams and relations for  $PSL(2, \mathbb{Z})$ . (Arabic summary) 85d:11044

James, David A. Results of a classification for subgroups of  $SL(2, \mathbb{R})$ . 85b:11036

Lacroix, N. H. J. (with Levesque, C.) Sur les sous-groupes normaux de  $SL_2$  sur un anneau local. [On the normal subgroups of  $SL_2$  over a local ring] 85b:11037

Larcher, H. The cusp amplitudes of the congruence subgroups of the classical modular group. II. 85i:11034

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Rosenberg, Steven The Gauss-Bonnet theorem and  $\zeta(2)$ . 85i:11035

Wallace, D. I. Conjugacy classes of hyperbolic matrices in  $SL(n, \mathbb{Z})$  and ideal classes in an order. 85h:11024

secondary classifications (11F06)

Apanasov, B. N. ★ Дискретные группы преобразований и структуры многообразий. [Discrete transformation groups and structures on manifolds] 85i:57002

Beardon, Alan F. ★ The geometry of discrete groups. 85d:22026

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Brunner, A. M. (with Frame, Michael L.; Lee, Youn W.; Wielenberg, Norbert J.) Classifying torsion-free subgroups of the Picard group. 85h:57012

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Helm, P. R. A note on noncongruence subgroups. 85d:20042

Hoare, A. H. M. (with Singerman, D.) The orientability of subgroups of plane groups. 85g:20061

Jones, Vaughan F. R. Groupes de tresses, algèbres de Hecke et facteurs de type  $II_1$ . (English summary) [Braid groups, Hecke algebras and type  $II_1$  factors] 85b:20044

Kern-Isberner, Gabriele (with Rosenberger, Gerhard) Einige Bemerkungen über Untergruppen der  $PSL(2, \mathbb{C})$ . [Some comments on subgroups of  $PSL(2, \mathbb{C})$ ] 85i:20047

Lee, Youn W. See Brunner, A. M.; et al. 85h:57012

Macbeath, A. M. Commensurability of co-compact three-dimensional hyperbolic groups. 85f:22013

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Mason, A. W. Anomalous normal subgroups of the modular group. 85k:20141

Mennicke, J. See Elstrodt, Jürgen; et al. 85g:11045

Müller, Winfried B. (with Nöbauer, Wilfried) Über die Fixpunkte der Potenzpermutationen. [On the fixed points of power permutations] 85i:11008

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Riley, Robert Applications of a computer implementation of Poincaré's theorem on fundamental polyhedra. 85b:20064

Rosenberger, Gerhard Some remarks on a paper of A. F. Beardon and P. L. Waterman about: "Strongly discrete subgroups of  $SL(2, \mathbb{C})$ " [J. London Math. Soc. (2) 24 (1981), no. 2, 325-328; MR 82i:30065]. 85j:22022

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Singerman, D. See Hoare, A. H. M. 85g:20061

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11F11 Modular forms, one variable

Andrews, George E. Hecke modular forms and the Kac-Peterson identities. 85e:11031

Cipra, Barry A. On the Niwa-Shintani theta-kernel lifting of modular forms. 85e:11032

Elliott, P. D. T. A. (with Moreno, Carlos J.; Shahidi, Freydoon) On the absolute value of Ramanujan's  $\tau$ -function. 85f:11030

Ewell, John A. A formula for Ramanujan's tau function. 85g:11036

Friedberg, Solomon On Maass wave forms and the imaginary quadratic Doi-Naganuma lifting. 85d:11045



On the imaginary quadratic Doi-Naganuma lifting of modular forms of arbitrary level. **85f:11031**

Haberland, Klaus. Perioden von Modulformen einer Variablen und Gruppencohomologie. I, II, III. [Periods of modular forms of one variable and group cohomology. I, II, III] **85k:11032**

Hafner, James L. Explicit estimates in the arithmetic theory of cusp forms and Poincaré series. **85f:11032a**

Zeros on the critical line for Dirichlet series attached to certain cusp forms. **85f:11032b**

Hoyt, William L. Parabolic cohomology and cusp forms of the second kind for extensions of fields of modular functions. **85b:11038**

Iwaniec, H. Prime geodesic theorem. **85b:11035**

Knopp, Marvin L. The weight-changing operator and the Mellin transform of modular integrals. **85i:11036**

Kurt, Veli. On modular forms of half integral weight. (Turkish summary) **85f:11033**

Lomadze, G. A. Cusp forms of prime level of Nebentypus. II. (Russian) **85i:11037**

Moreno, Carlos J. See Elliott, P. D. T. A.; et al., **85f:11030**

Raghavan, Srinivasacharya. On Ramanujan and Dirichlet series with Euler products. **85j:11048**

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Tunnell, J. B. A classical Diophantine problem and modular forms of weight  $3/2$ . **85d:11046**

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Agarwal, Anand Kumar. Certain three-term relations between partial theta functions and summation formulae. **85d:33004**

Cohen, Paula. On the coefficients of the transformation polynomials for the elliptic modular function. **85k:11030**

Falslev, S. R. See Kogan, L. A.; et al., **85b:11033**

Gross, Benedict (with Zagier, Don). Points de Heegner et dérivées de fonctions  $L$ . (English summary) [Heegner points and derivatives of  $L$ -functions] **85d:11063**

Kogan, L. A. (with Tshupulatov, B. T.; Falslev, S. R.) ★ Представление чисел квадратичными формами. (Russian) [Representation of numbers by quadratic forms] **85b:11033**

Kolha, Masao. On McKay's conjecture. **85m:11029**

(Lal, Sunder). See Maass, H., **85g:11034**

Maass, H. ★ Lectures on modular functions of one complex variable. **85g:11034**

Newman, Morris (with Shanks, Daniel) On a sequence arising in series for  $\tau$ . **85k:11069**

Parson, L. A. Lower bound for the norm of the theta operator. **85d:30073**

Pei, Ding Yi. The number of solutions for the Diophantine equation  $ax^2 + by^2 + cz^2 = n$ . **85k:11013**

Shanks, Daniel. See Newman, Morris, **85k:11069**

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#### 11F12 Automorphic forms, one variable

Johnson, David Howard. Estimates for nonanalytic cusp forms. **85g:11037**

Katok, Svetlana. Modular forms associated to closed geodesics and arithmetic applications. **85k:11026**

Klyachko, A. A. Modular forms and representations of symmetric groups. (Russian) **85i:11034**

Maeda, Yoshitaka. A remark on the values of the zeta functions associated with cusp forms. **85i:11038**

Moreno, Carlos J. (with Shahidi, Freydoon) The fourth moment of Ramanujan  $\tau$ -function. **85i:11039**

Parson, L. A. (with Rosen, Kenneth H.) Automorphic integrals and rational period functions for the Hecke groups. **85j:11049**

Pei, Ding Yi. Eisenstein series of weight  $\frac{3}{2}$ . II. **85i:11040**

Rosen, Kenneth H. See Parson, L. A., **85j:11049**

Shahidi, Freydoon. See Moreno, Carlos J., **85i:11039**

Shemanske, Thomas. Primitive newforms of weight  $\frac{3}{2}$ . **85i:11041**

Wolffart, Jürgen. Diskrete Deformation Fuchscher Gruppen und ihrer automorphen Formen. (English summary) [Discrete deformation of Fuchsian groups and their automorphic forms] **85e:11044**

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Cipra, Barry A. On the Niwa-Shintani theta-kernel lifting of modular forms. **85e:11032**

Daase, D. Automorphe Formen und Carleson-Mengen. (English summary) [Automorphic forms and Carleson sets] **85a:30071**

Earle, Clifford J. The integrable automorphic forms as a dual space. **85i:30087**

Elstrodt, Jürgen (with Grunewald, F.; Mennicke, J.) Discontinuous groups in three-dimensional hyperbolic space: analytic theory and arithmetic applications. (Russian) **85g:11045**

Friedberg, Solomon. On the imaginary quadratic Doi-Naganuma lifting of modular forms of arbitrary level. **85f:11031**

Good, Anton. ★ Local analysis of Selberg's trace formula. **85k:11026**

Grunewald, F. See Elstrodt, Jürgen; et al., **85g:11045**

Helminck, G. F. ★ Eisenstein series on the metaplectic group: an algebraic approach. **85b:11044**

Ishii, Hidenori. Congruences between cusp forms and the fundamental units of real quadratic number fields. **85g:11038**

Mennicke, J. See Elstrodt, Jürgen; et al., **85g:11045**

Nakamura, Tetsuo. On Shimura's elliptic curve over  $\mathbb{Q}(\sqrt{29})$ . **85i:11051**

(Parshin, A. N.) See Elstrodt, Jürgen; et al., **85g:11045**

Rumely, Robert S. A formula for the grössencharacter of a parametrized elliptic curve. **85e:14064**

#### 11F20 Dedekind eta function, Dedekind sums

Dieter, Ulrich. Cotangent sums, a further generalization of Dedekind sums. **85i:11042**

Kolha, Masao. On McKay's conjecture. **85m:11029**

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Arthur, James. On a family of distributions obtained from Eisenstein series. I. Application of the Paley-Wiener theorem. **85k:22044**

Barrucand, P. (with Duboué, M.) Fractions continues, sommes de Dedekind et formes quadratiques. [Continued fractions, Dedekind sums and quadratic coefficients] **85i:11012**

Duboué, M. See Barrucand, P., **85i:11012**

Klyachko, A. A. Modular forms and representations of symmetric groups. (Russian) **85i:11034**

Rosen, Kenneth H.  $L$ -series for quadratic forms at  $s = 1$ . I. Applications of a theorem of Söhngen. **85g:11097a**

$L$ -series for quadratic forms at  $s = 1$ . II. The modular functions that arise. **85g:11097b**

#### 11F25 Hecke-Petersson operators, differential operators (1 variable)

Piser, Arnold. Hecke operators for  $\Gamma_0(N)$ . **85c:11045**

#### secondary classifications (11F25)

Kuribayashi, Isuzumi. On automorphisms of prime order of a Riemann surface as matrices. **85i:14019**

#### 11F27 Theta series; Weil representation

Styer, Robert. Evaluating symplectic Gauss sums and Jacobi symbols. **85i:11043**

Tong, Yue Lin Lawrence (with Wang, S. P.) Theta functions defined by geodesic cycles in quotients of  $SU(p, 1)$ . **85c:11046**

(with Wang, S. P.) Correspondence of Hermitian modular forms to cycles associated to  $SU(p, 2)$ . **85d:11047**

Wang, S. P. See Tong, Yue Lin Lawrence, **85c:11046** and **85d:11047**

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Anderson, Greg W. Theta functions and holomorphic differential forms on compact quotients of bounded symmetric domains. **85i:32047**

Baer, S. Two-dimensional infinite repulsive systems: the Yang-Lee singularities are isolated branch points. **85i:82003**

Berndt, Bruce C. (with Goldberg, Larry A.) Analytic properties of arithmetic sums arising in the theory of the classical theta functions. **85d:11008**

Bobenko, A. I. Finite-range solutions in the language of automorphic functions. The Kadomtsev-Petviashvili equation. (Russian. English summary) **85d:58037**

Goldberg, Larry A. See Berndt, Bruce C., **85d:11008**

Helminck, G. F. ★ Eisenstein series on the metaplectic group: an algebraic approach. **85b:11044**

Haia, J. S. (with Hung, D. C.) Theta series of ternary and quaternary quadratic forms. **85b:11054**

Hung, D. C. See Haia, J. S., **85b:11054**

Piatetski-Shapiro, Ilya Isidovitch. Special automorphic forms on  $PGSp_4$ . **85e:11033**

A remark on my paper: "On the Saito-Kurokawa lifting" [Invent. Math. 71 (1983), 2, 309-338; MR 84i:10038]. **85e:11038**

Styer, Robert. Prime determinant matrices and the symplectic theta function. **85j:11056**

Tong, Yue Lin Lawrence. Special cycles, harmonic forms and invariant theory. **85m:32035**

#### 11F30 Fourier coefficients of automorphic forms (1 variable)

Akbarov, M. K. The mean square with respect to arithmetic progressions of Fourier coefficients of cusp forms. (Russian) **85d:11048**

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Misumoto, Shin-ichiro. Fourier coefficients of generalized Eisenstein series of degree two. **85d:11049**

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- Holzapfel, R.-P.** See **Feustel, J.-M.**, **85b:11039**
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- Christian, Ulrich** Comments on a paper: "The analytic continuation of the Eisenstein series into the Siegel modular group" [J. Reine Angew. Math. **317** (1980), 40-73; MR **82f:10032**] by B. Diehl. (German) **85f:11036**
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## 11F75 Cohomology of arithmetic groups

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Ishii, Noburo Construction of generators of modular function fields. 85k:11021

Ohta, Masami On  $l$ -adic representations attached to automorphic forms. 85f:1103911F85  $p$ -adic theory, local fields [See also 14G20, 22E50.]Panchishkin, A. A. Le prolongement  $p$ -adique analytique des fonctions  $L$  de Rankin. [Analytic  $p$ -adic continuation of Rankin's  $L$ -functions] 85j:11061

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Moreno, Carlos J. The Chowla-Selberg formula. 85b:11034

Taylor, M. J. Structure galoisienne des anneaux d'entiers des extensions abéliennes d'un corps quadratique imaginaire. [Galois structure of rings of integers of abelian extensions over an imaginary quadratic field] 85m:11075

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## 11Gxx Arithmetic algebraic geometry (Diophantine geometry)

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## 11G05 Elliptic curves over global fields

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Dem'yanenko, V. A. Orders of torsion points of elliptic curves. (Russian) 85k:11028

Laska, Michael ★ Elliptic curves over number fields with prescribed reduction type. 85j:11064

Nakamura, Tetsuo On Shimura's elliptic curve over  $\mathbb{Q}(\sqrt{29})$ . 85i:11051Nishioaka, Kumiko The 2-adic representations attached to elliptic curves defined over  $\mathbb{Q}$  whose points of order 2 are all  $\mathbb{Q}$ -rational. 85b:11045

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Perrin-Riou, Bernadette Descente infinie et hauteur  $p$ -adique sur les courbes elliptiques à multiplication complexe. [Infinite descent and  $p$ -adic height on elliptic curves with complex multiplication] 85e:11040Sur les hauteurs  $p$ -adiques. (English summary) [On  $p$ -adic heights] 85b:11046Poulakis, Dimitrios Points rationnels sur  $\mathbb{Q}$  de la jacobienne de la courbe modulaire  $X_0(3^4)$ . (English summary) [Rational points over  $\mathbb{Q}$  of the Jacobian of the modular curve  $X_0(3^4)$ ] 85j:11065

Rajwade, A. R. See Rishi, Dharam Bir; et al., 85b:11047

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## secondary classifications (11J13)

- Bijlma, Alex** A note on elliptic functions and approximation by algebraic numbers of bounded degree. (French summary) **85c:11063**
- Chirakli, V. G.** Estimates of linear forms with algebraic coefficients. (Russian) **85i:11052**
- Lagaras, J. C.** The computational complexity of simultaneous Diophantine approximation problems. (See **85h:40007**)
- Tausat, Yves** Approximations simultanées de deux séries formelles quadratiques. [Simultaneous approximations of two quadratic formal power series] **85i:11056**

## 11J17 Approximation by numbers from a fixed field

- Flahive, Mary** (with Hensley, Douglas) Approximation to complex  $\xi$  from within a wedge. **85i:11055**
- Hensley, Douglas** See **Flahive, Mary**, **85i:11055**
- Ishibashi, Mahoto** (with Kanemitsu, Shigeru; Nowak, Werner-Georg) On the Farey-Ford triangles. **85m:11037**
- Kanemitsu, Shigeru** See **Ishibashi, Mahoto**; et al., **85m:11037**
- Nowak, Werner-Georg** See **Ishibashi, Mahoto**; et al., **85m:11037**
- Yavid, K. Yu.** Estimate of the ratio of two linear forms. (Russian. English summary) **85f:11047**

## 11J20 Inhomogeneous linear forms

- Beck, Josef** (with Spencer, Joel) Integral approximation sequences. **85j:11074**
- Harman, Glyn** Diophantine approximation with a prime and an almost-prime. **85h:11036**
- Shorey, T. N.** Linear forms in members of a binary recursive sequence. **85m:11038**
- Spencer, Joel** See **Beck, Josef**, **85j:11074**

## secondary classifications (11J20)

- Galochkin, A. I.** Estimates, unimprovable with respect to height, for certain linear forms. (Russian) **85m:11042**

## 11J25 Diophantine inequalities [See also 11D75.]

## secondary classifications (11J25)

- Liu, Ming Chit** On binary equations. **85b:11026**

11J37 Products of  $n$  linear forms in  $n$  variables ( $n \geq 2$ ) [See mainly 11H46.]

## secondary classifications (11J37)

- Akramov, U. A.** The product of six real homogeneous linear forms. (Russian) **85h:11035**
- See also **Bakiev, K. B.**, **85h:11036**
- Bakiev, K. B.** (with Akramov, U. A.) The product of  $n$ -real homogeneous linear forms. (Russian) **85h:11036**

## 11J45 Minima of quadratic forms in more than two variables [See mainly 11H50.]

## secondary classifications (11J45)

- Bambah, R. P.** (with Dumir, V. C.; Hans-Gill, R. J.) On a conjecture of Jackson on nonhomogeneous quadratic forms. **85a:11012**
- Dumir, V. C.** See **Bambah, R. P.**; et al., **85a:11012**
- Hans-Gill, R. J.** See **Bambah, R. P.**; et al., **85a:11012**

## 11J61 Approximation in non-Archimedean valuations

- Nesterenko, Yu. V.** Diophantine approximations in the  $p$ -adic number field. (Russian) **85g:11064**
- Sprindzhuk, V. G.** Arithmetic specializations in polynomials. **85b:11057**
- Tausat, Yves** Approximations simultanées de deux séries formelles quadratiques. [Simultaneous approximations of two quadratic formal power series] **85i:11056**
- Wang, Lian Xiang** On  $p$ -adic  $F$ -functions. **85d:11066**
- Zheludevich, F. F.** Simultaneous approximations of numbers by roots of integral polynomials. (Russian. English summary) **85g:11055**

## secondary classifications (11J61)

- Eccassut, Alain** Numbers with order  $\leq 1$ . **85j:11060**
- Nesterenko, Yu. V.** Diophantine approximations in the  $p$ -adic number field. (Russian) **85h:11031**
- Tausat, Yves** Approximation simultanée dans un corps de séries formelles. (English summary) [Simultaneous approximation in a formal power series field] **85j:11073**
- Zheludevich, F. F.** The simultaneous approximation of numbers by the roots of integer polynomials. (Russian. English summary) **85f:11046**

## 11J68 Rational approximation to algebraic numbers

- Dumaud, René** Algorithmes d'approximations diophantiennes. [Diophantine approximation algorithms] **85d:11067**
- Evertse, J.-H.** On equations in  $S$ -units and the Thue-Mahler equation. **85f:11048**
- Louboutin, Roland** Sur la mesure de Mahler d'un nombre algébrique. (English summary) [On Mahler's measure of an algebraic number] **85b:11058**

## secondary classifications (11J68)

- Basarab, Serban A.** Roth's theorem: nonstandard aspects. (Romanian) **85b:11116**
- Bombieri, E.** (with Vaaler, J.) On Siegel's lemma. **85g:11049a**
- (with Vaaler, J.) Addendum to: "On Siegel's lemma". **85g:11049b**
- Cantor, David G.** (with Straus, E. G.) Correction to the paper: "On a conjecture of D. H. Lehmer" [Acta Arith. **42** (1982/83), no. 1, 97-100; MR **84a:12004**]. **85a:11017**
- Chudnovsky, G. V.** On the method of Thue-Siegel. **85g:11058**
- Rational approximations to linear forms of exponentials and binomials. **85c:11055**
- Girard, Jean-Yves** Herbrand's theorem and proof theory. **85k:03035**
- Osgood, Charles F.** A number theoretic-differential equations approach to generalizing Nevanlinna theory. **85b:30043**
- Straus, E. G.** See **Cantor, David G.**, **85a:11017**
- Vaaler, J.** See **Bombieri, E.**, **85g:11049a** and **85g:11049b**

## 11J69 Simultaneous rational approximation to algebraic numbers

- Mignotte, Maurice** Estimations élémentaires effectives sur les nombres algébriques. [Effective elementary estimates on algebraic numbers] **85h:11039**
- Skubenko, B. F.** On the generalized Roth-Schmidt theorem. (Russian. English summary) **85i:11057**
- Wang, Yuan** (with Xu, Guang Shan; Zhang, Rong Xiao) On a number-theoretic method of numerical integration in a multidimensional space. II. (Chinese. English summary) **85f:11049**
- Xu, Guang Shan** See **Wang, Yuan**; et al., **85f:11049**
- Zhang, Rong Xiao** See **Wang, Yuan**; et al., **85f:11049**
- Zhu, Yao Chen** A theorem on Diophantine approximation. (Chinese) (Not in MR)

## secondary classifications (11J69)

- Everest, G. R.** Diophantine approximation and the distribution of normal integral generators. **85c:11107**

## 11J70 Continued fractions and generalizations [See also 11A55, 11K50.]

- Dueck, Gunter** See **Williams, Hugh Cowie**, **85j:11077**
- Holsbaun, Ulrich** (with Riederle, Max) A characterization of the semiregular continued fractions which represent quadratic irrationals. **85c:11057**
- Kogoniy, P. G.** Inverse images of values of the functions  $L(\alpha)$  and  $\lambda(\alpha)$ . (Russian. English and Georgian summaries) **85g:11056**
- Ramharter, G.** Some metrical properties of continued fractions. **85c:11058**
- Extremal values of continuants. **85c:11059**
- Riederle, Max** See **Holsbaun, Ulrich**, **85c:11057**
- Rönd, Arne** See **Selmer, Ernst S.**, **85j:11075**
- Schmidt, Asmus L.** Diophantine approximation of complex numbers. **85i:11058**
- Selmer, Ernst S.** (with Rönd, Arne) On the postage stamp problem with three stamp denominations. II. **85j:11075**
- Shorey, T. N.** Divisors of convergents of a continued fraction. **85d:11068**
- Tong, Jingcheng** The conjugate property of the Borel theorem on Diophantine approximation. **85m:11039**
- A generalization of the Borel theorem in Diophantine approximation. **85j:11076**
- Williams, Hugh Cowie** (with Dueck, Gunter) An analogue of the nearest integer continued fraction for certain cubic irrationalities. **85j:11077**
- Wolfskill, J.** A growth bound on the partial quotients of cubic numbers. **85f:11050**

## secondary classifications (11J70)

- Brentjes, A. J.** Multidimensional continued fraction algorithms. **85f:11096**
- Bundschuh, Peter** Transcendental continued fractions. **85g:11057**
- Eratov, K. D.** An analogue of a metric theorem of Khinchin on continued fractions. (Russian) **85c:11055**
- Sof, Anthony** Continued fractions. **85j:40006**
- 11J71 Distribution modulo one [See also 11K06.]**
- Busejeanu, Serban** The Kronecker-Hardy-Littlewood theorem. (Romanian. English summary) **85j:11078**
- Hlawka, Edmund** Gleichverteilung und das Konvergenzverhalten von Potenzreihen am Rande des Konvergenzkreises. (English summary) [Uniform distribution and the convergence behavior of power series on the boundary of the convergence circle] **85c:11060**

## secondary classifications (11J71)

- Beck, Josef** On an imbalance problem of G. Wagner concerning polynomials. **85j:11089**
- Hlawka, Edmund** ★ The theory of uniform distribution. **85f:11056**
- Molnár, S. H.** Sine sequence of second order linear recurrences. **85f:11008**

- Oppenheim, A. The prisoner's walk: an exercise in number theory. **85m:11004**  
(Orde, Henry) See *Hiawka, Edmund*, **85f:11056**  
Shparlinskiĭ, I. E. The rate of convergence of Newton's interpolation process and the size of certain codes. (Russian) **85f:94016**  
Wang, Yuan. Diophantine approximation theory and approximate analysis. (Chinese) (Not in MR)  
(Zaremba, S. K.) See *Hiawka, Edmund*, **85f:11056**

## 11J72 Irrationality; linear independence over a field

- Gutnik, L. A. Irrationality of some quantities that contain  $\zeta(3)$ . (Russian) **85j:11079**  
Philippon, P. Critères pour l'indépendance algébrique de familles de nombres. [Criteria of algebraic independence for families of numbers] (Not in MR)

secondary classifications (11J72)

- Fel'dman, N. I. ★ Седьмая проблема Гильберта. (Russian) [Hilbert's seventh problem] **85b:11001**  
Meyer, Yves. Sur un problème de Michael Herman. [On a problem of Michael Herman] **85c:42011**

## 11J81 Transcendence (general theory)

- Alinaçik, Kâmil. On the subclasses  $U_m$  in Mahler's classification of the transcendental numbers. (Turkish summary) **85c:11061**  
Bundschuh, Peter. Transcendental continued fractions. **85g:11057**  
Escassut, Alain. Numbers with order  $\leq 1$ . **85j:11080**  
Loxton, J. H. A method of Mahler in transcendence theory and some of its applications. **85i:11059**  
Myerson, Gerald. A measure for polynomials in several variables. **85e:11045**  
Nesterenko, Yu. V. Estimates for the characteristic function of a prime ideal. (Russian) **85e:11046**  
Ramachandra, K. (with Srinivasan, Seshadri) A note to a paper: "Contributions to the theory of transcendental numbers. I, II" [Acta Arith. **14** (1967/68), 65-72, 73-88; MR **37** #165] by Ramachandra on transcendental numbers. **85i:11060**  
Ren, Jian Hua. See *Zhu, Yao Chen*, **85b:11059**  
Salikhov, V. Kh. Algebraic independence of values of hypergeometric  $E$ -functions. (Russian) **85h:11040**  
Srinivasan, Seshadri. See *Ramachandra, K.*, **85i:11060**  
Wüstholz, G. Recent progress in transcendence theory. (See **85i:11001**)  
Yu, Kun Rui. See *Yu, Xiu Yuan*, (Not in MR)  
Yu, Xiu Yuan (with Yu, Kun Rui) A class of linear forms of logarithms of complex numbers. (Chinese) (Not in MR)  
Zhu, Yao Chen (with Ren, Jian Hua) The transcendence of the values of certain gap series at rational points. (Chinese. English summary) **85b:11059**

secondary classifications (11J81)

- Bernik, V. I. Application of the Hausdorff dimension in the theory of Diophantine approximations. (Russian) **85k:11035**  
Bijlsma, Alex. A note on elliptic functions and approximation by algebraic numbers of bounded degree. (French summary) **85c:11062**  
Fel'dman, N. I. ★ Седьмая проблема Гильберта. (Russian) [Hilbert's seventh problem] **85b:11001**  
Gramain, François (with Mignotte, Maurice) Fonctions entières arithmétiques. [Entire arithmetic functions] **85d:30033**  
Mignotte, Maurice. See *Gramain, François*, **85d:30033**  
Robinson, M. L. On certain transcendental numbers. **85j:11081**  
Senkov, Hülya. Verallgemeinerungen eines Schneiderschen Satzes über Funktionswerte einer Algebraischen Funktion. [Generalizations of a Schneider theorem on function values of an algebraic function] **85i:11055**  
Waldschmidt, Michel. Sur certains caractères du groupe des classes d'idèles d'un corps de nombres. [On certain characters of the group of idèle classes of a number field] **85c:11097**  
(with Zhu, Yao Chen) Une généralisation en plusieurs variables d'un critère de transcendence de Gelfond. (English summary) [A generalization in several variables of a transcendence criterion of Gelfond] **85e:11047**  
Zhu, Yao Chen. See *Waldschmidt, Michel*, **85e:11047**

## 11J82 Measures of irrationality and of transcendence

- Chudnovsky, G. V. On the method of Thue-Siegel. **85g:11058**  
Huttnner, Marc. Approximants de Padé des fonctions binômes et mesures de l'irrationalité des racines de nombres rationnels. [Padé approximants of binomial functions and irrationality measures of the roots of rational numbers] **85m:11040**  
Reysaat, E. Mesures de transcendence pour les logarithmes de nombres rationnels. [Transcendence measures for the logarithms of rational numbers] **85b:11060**  
Stihl, Th. Irrationalitätsmaße für Werte der Lösungen einer Funktionalgleichung von Poincaré. [Irrationality measures for values of the solutions of a functional equation of Poincaré] **85g:11059**  
Takeuchi, Mamoru. An effective lower bound for a certain exponential function. **85m:11041**  
Tubbs, Robert. A transcendence measure for some special values of elliptic functions. **85b:11061**

## 11J85 Algebraic independence; Gelfond's method

- Galochkin, A. I. Estimates, unimprovable with respect to height, for certain linear forms. (Russian) **85m:11042**  
Nesterenko, Yu. V. A sufficient condition for algebraic independence of numbers. (Russian. English summary) **85f:11051**  
Algebraic independence of algebraic powers of algebraic numbers. (Russian) **85i:11061**

- Diophantine approximations in the  $p$ -adic number field. (Russian) **85k:11031**  
Robinson, M. L. On certain transcendental numbers. **85j:11081**  
Stihl, Th. Arithmetische Eigenschaften spezieller Heinescher Reihen. [Arithmetic properties of special Heine series] **85j:11082**  
Waldschmidt, Michel (with Zhu, Yao Chen) Une généralisation en plusieurs variables d'un critère de transcendence de Gelfond. (English summary) [A generalization in several variables of a transcendence criterion of Gelfond] **85e:11047**  
Zhu, Yao Chen. An infinite system of algebraically independent numbers. **85i:11062**  
A theorem about algebraic independence and its application. (Chinese. English summary) **85i:11063**  
On the algebraic independence of certain power series of algebraic numbers. **85m:11043**  
See also *Waldschmidt, Michel*, **85e:11047**

secondary classifications (11J85)

- Fel'dman, N. I. ★ Седьмая проблема Гильберта. (Russian) [Hilbert's seventh problem] **85b:11001**  
Philippon, P. Variétés abéliennes et indépendance algébrique. I. [Abelian varieties and algebraic independence. I] **85j:11083**  
Ramachandra, K. (with Srinivasan, Seshadri) A note to a paper: "Contributions to the theory of transcendental numbers. I, II" [Acta Arith. **14** (1967/68), 65-72, 73-88; MR **37** #165] by Ramachandra on transcendental numbers. **85i:11060**  
Srinivasan, Seshadri. See *Ramachandra, K.*, **85i:11060**  
Waldschmidt, Michel. Applications de la théorie de Kummer à des problèmes diophantiens. [Applications of Kummer theory to Diophantine problems] **85h:11015**

## 11J86 Linear forms in logarithms; Baker's method

secondary classifications (11J86)

- Bertrand, D. Endomorphismes de groupes algébriques; applications arithmétiques. [Endomorphisms of algebraic groups; arithmetic applications] **85d:11099**  
Fel'dman, N. I. ★ Седьмая проблема Гильберта. (Russian) [Hilbert's seventh problem] **85b:11001**  
Shorey, T. N. Applications of linear forms in logarithms to binary recursive sequences. **85f:11009**  
Takeuchi, Mamoru. An effective lower bound for a certain exponential function. **85m:11041**  
Waldschmidt, Michel. Applications de la théorie de Kummer à des problèmes diophantiens. [Applications of Kummer theory to Diophantine problems] **85h:11015**  
Wüstholz, G. Some remarks on a conjecture of Waldschmidt. **85f:11052**

## 11J87 Applications to Diophantine equations and other arithmetic problems

- Osgood, Charles F. Effective bounds on the Diophantine approximation of algebraic functions, and Nevanlinna theory. (See **85g:11007**)

secondary classifications (11J87)

- Brindza, B. On  $S$ -integral solutions of the equation  $y^m = f(x)$ . **85m:11017**  
Györy, K. Bounds for the solutions of norm form, discriminant form and index form equations in finitely generated integral domains. **85f:11020**  
de Mathan, Bernard (with Tausat, Yves) Approximations simultanées de séries formelles quadratiques. (English summary) [Simultaneous approximations of quadratic formal power series] **85a:11015**  
Shorey, T. N. The greatest square free factor of a binary recursive sequence. **85i:11019**  
Sprindzhuk, V. G. ★ Классические диофантовы уравнения от двух неизвестных. (Russian) [Classical Diophantine equations in two unknowns] **85d:11022**  
Tausat, Yves. See *de Mathan, Bernard*, **85a:11015**  
Waldschmidt, Michel. Applications de la théorie de Kummer à des problèmes diophantiens. [Applications of Kummer theory to Diophantine problems] **85h:11015**

## 11J89 Transcendence theory of elliptic and abelian functions and algebraic groups

- Bertrand, D. Endomorphismes de groupes algébriques; applications arithmétiques. [Endomorphisms of algebraic groups; arithmetic applications] **85d:11099**  
Théorie de Kummer sur les groupes algébriques. [Kummer theory on algebraic groups] (See **85g:11009**)  
Bijlsma, Alex. A note on elliptic functions and approximation by algebraic numbers of bounded degree. (French summary) **85c:11062**  
Brownawell, W. Dale. Zero estimates for solutions of differential equations. **85h:11041**  
Henniart, Guy. Représentations  $l$ -adiques abéliennes. [Abelian  $l$ -adic representations] **85d:11070**  
Laurent, Michel. Sur la transcendence du rapport de deux intégrales eulériennes. [On the transcendence of the ratio of two Euler integrals] **85b:11062**  
Minorant de la hauteur de Néron-Tate. [Lower bounds of the Néron-Tate height] **85e:11048**  
Masser, D. W. (with Wüstholz, G.) Fields of large transcendence degree generated by values of elliptic functions. **85g:11060**  
Philippon, P. Variétés abéliennes et indépendance algébrique. I. [Abelian varieties and algebraic independence. I] **85j:11083**  
Variétés abéliennes et indépendance algébrique. II. Un analogue abélien du théorème de Lindemann-Weierstraß. [Abelian varieties and algebraic independence. II. An abelian analogue of the Lindemann-Weierstraß theorem] **85j:11084**  
Wüstholz, G. Some remarks on a conjecture of Waldschmidt. **85f:11052**  
Über das Abelsche Analogon des Lindemannschen Satzes. I. [On the abelian analogue of the Lindemann theorem. I] **85i:11064**  
See also *Masser, D. W.*, **85g:11060**

## secondary classifications (11J89)

- Bertrand, D. Propriétés arithmétiques de fonctions  $\theta$  à plusieurs variables. [Arithmetical properties of theta functions of several variables] (See 85i:11001)  
 Tubbs, Robert A transcendence measure for some special values of elliptic functions. 85b:11061  
 Wüstholz, G. Recent progress in transcendence theory. (See 85i:11001)

## 11J91 Transcendence theory of other special functions

- Chirskii, V. G. Estimates of linear forms with algebraic coefficients. (Russian) 85d:11032  
 Nishioka, Kumiko On a problem of Mahler for transcendence of function values. II. 85f:11053  
 Shidlovskii, A. B. The basic lemma of the method of proof of algebraic independence of values of  $E$ -functions. (Russian) 85b:11042  
 Väinänen, K. On a class of  $G$ -functions. 85f:11054  
 Wang, Lian Xiang On  $p$ -adic  $E$ -functions and  $G$ -functions. 85j:11065

## secondary classifications (11J91)

- Beukers, F. (with Matala-Aho, T.; Väinänen, K.) Remarks on the arithmetic properties of the values of hypergeometric functions. 85g:11052  
 Chudnovsky, G. V. Rational approximations to linear forms of exponentials and binomials. 85c:11055  
 Laurent, Michel Sur la transcendance du rapport de deux intégrales eulériennes. [On the transcendence of the ratio of two Euler integrals] 85b:11062  
 Matala-Aho, T. See Beukers, F.; et al., 85g:11052  
 Väinänen, K. See Beukers, F.; et al., 85g:11052  
 Wang, Lian Xiang On  $p$ -adic  $F$ -functions. 85d:11066

## 11J99 None of the above, but in this section

- Gramain, François Sur le théorème de Fukasawa-Gelfond-Gruman-Masser. [On the Fukasawa-Gelfond-Gruman-Masser theorem] 85d:11071  
 Krupnik, V. N. On the simultaneous approximability of real numbers. (Russian) 85b:11063  
 Lewton, Wayne M. Kronecker's theorem and rational approximation of algebraic numbers. 85c:11063  
 Masser, D. W. On certain functional equations in several variables. 85e:11049  
 Senkon, Hilya Verallgemeinerungen eines Schneiderschen Satzes über Funktionswerte einer Algebraischen Funktion. [Generalizations of a Schneider theorem on function values of an algebraic function] 85f:11055

## secondary classifications (11J99)

- Debes, Pierre Spécialisations de polynômes. [Polynomial specialization] 85i:11090  
 Drobot, V. Approximation of curves by polygons. 85f:33004

## 11Kxx Probabilistic theory: distribution modulo 1; metric theory of algorithms

## 11K06 General theory of distribution modulo 1 [See also 11J71.]

- Berend, Daniel Multi-invariant sets on tori. 85b:11064  
 Blum, Julius R. Ergodic sequences of integers. 85i:11065  
 Coquet, Jean (with Liardet, Pierre) Répartitions uniformes des suites et indépendance statistique. (English summary) [Uniform distributions of sequences and statistical independence] 85d:11072  
 Fleischer, Wilhelm (with Stegbuchner, Hans) Über eine Ungleichung in der Theorie der Gleichverteilung mod. 1. [On an inequality in the theory of uniform distribution mod 1] 85e:11050  
 Feiner, Erling Some special  $W$ -almost periodic sets on the integers. 85j:11066  
 Harman, Glyn On the distribution of  $\sqrt{p}$  modulo one. 85e:11051  
 Helikalek, Peter Regularities in the distribution of special sequences. 85e:11052  
 Hlawka, Edmund ★ The theory of uniform distribution. 85f:11056  
 Kias, P. (with Molnár, Sándor) On distribution of linear recurrences modulo 1. 85i:11033  
 Kotlyar, B. D. The distribution of fractional parts. (Russian) 85d:11073  
 Liardet, Pierre See Coquet, Jean, 85d:11072  
 Mauduit, Christian Automates finis et équirépartition modulo 1. (English summary) [Finite automata and equidistribution modulo 1] 85i:11066  
 Mendis France, M. Entropie, dimension et thermodynamique des courbes planes. [Entropy, dimension and thermodynamics of plane curves] 85d:11074  
 Molnár, Sándor See Kias, P., 85i:11033  
 Müller, Winfried B. (with Taschner, R. J.) Ein metrischer Satz der  $C$ -Gleichverteilung. (English summary) [A metric theorem on  $C$ -uniform distribution] 85m:11044  
 Nowak, Werner-Georg Zur asymptotischen Verteilung der Potenzen komplexer Zahlen. [On the asymptotic distribution of the powers of complex numbers] 85b:11065  
 (Orde, Henry) See Hlawka, Edmund, 85f:11056  
 Reich, Axel Dirichletreihen und gleichverteilte Folgen. (English summary) [Dirichlet series and sequences with uniform distribution] 85g:11061  
 Schatte, Peter On  $H_\infty$ -summability and the uniform distribution of sequences. 85f:11057  
 Stegbuchner, Hans See Fleischer, Wilhelm, 85e:11050  
 Taschner, R. J. See Müller, Winfried B., 85m:11044  
 Tichy, Robert F. Ein metrischer Satz in der Theorie der Gleichverteilung. II. [A metric theorem in the theory of uniform distribution. II] 85i:11067  
 (Zaremba, S. K.) See Hlawka, Edmund, 85f:11056

## secondary classifications (11K06)

- Borel, J.-P. Sous-groupes de  $\mathbb{R}$  liés à la répartition modulo 1 de suites. (English summary) [Subgroups of  $\mathbb{R}$  related to the distribution modulo 1 of sequences] 85j:11091  
 Coquet, Jean Sur la représentation des multiples d'un entier dans une base. (English summary) [Representing the multiples of an integer in a base] 85m:11045  
 Tichy, Robert F. Diskrepanz bezüglich gewichteter Mittel und Konvergenzverhalten von Potenzreihen. (English summary) [Discrepancy with respect to weighted means and convergence behavior of power series] 85c:11066

## 11K16 Normal numbers, radix expansions, etc. [See also 11A63.]

- Coquet, Jean Sur la représentation des multiples d'un entier dans une base. (English summary) [Representing the multiples of an integer in a base] 85m:11045  
 (with Rhin, Georges; Toffin, Philippe) Fourier-Bohr spectrum of sequences related to continued fractions. 85c:11064  
 Rajagopal, A. K. (with Uppuluri, V. R. R.; Scott, David S.; Sitharama Iyengar, S.; Yellayi, Mohan) New structural properties of strings generated by leading digits of  $2^n$ . 85j:11067  
 Rhin, Georges See Coquet, Jean; et al., 85c:11064  
 Scott, David S. See Rajagopal, A. K.; et al., 85j:11067  
 Sitharama Iyengar, S. See Rajagopal, A. K.; et al., 85j:11067  
 Stoneham, R. G. On a sequence of  $(j, c)$ -normal approximations to  $\pi/4$  and the Brouwer conjecture. 85g:11062  
 Toffin, Philippe See Coquet, Jean; et al., 85c:11064  
 Uppuluri, V. R. R. See Rajagopal, A. K.; et al., 85j:11067  
 Volkmann, Bodo À propos du théorème de Camels-Schmidt concernant des nombres normaux. [On the Camels-Schmidt theorem concerning normal numbers] (See 85j:11069)  
 Yellayi, Mohan See Rajagopal, A. K.; et al., 85j:11067

## secondary classifications (11K16)

- Kirschenhofer, Peter (with Tichy, Robert F.) On the distribution of digits in Cantor representations of integers. 85h:11005  
 Schatte, Peter On the asymptotic uniform distribution of sums reduced mod 1. 85m:50049  
 Schmid, Johannes The joint distribution of the binary digits of integer multiples. 85j:11093  
 Tichy, Robert F. See Kirschenhofer, Peter, 85h:11005

## 11K31 Other special sequences

- Rausy, Gérard Suites à termes dans un alphabet fini. [Sequences with terms in a finite alphabet] 85j:11068

## secondary classifications (11K31)

- Allouche, Jean-Paul (with Cornard, Michel) Une propriété extrême de suites automatiques. [An extremal property of automatic sequences] 85g:58033  
 Bothenritsan, Michael Homogeneously distributed sequences and Poincaré sequences of integers of sublacunary growth. 85k:11034  
 Cornard, Michel See Allouche, Jean-Paul, 85g:58033  
 Dumont, Jean-Marie Discrepance des progressions arithmétiques dans la suite de Morse. (English summary) [Discrepancy of the arithmetical progressions in the Thue-Morse sequence] 85f:11058  
 Matthews, K. R. (with Watts, A. M.) A generalization of Hasse's generalization of the Syracuse algorithm. 85i:11068  
 Watts, A. M. See Matthews, K. R., 85i:11068

## 11K36 Well-distributed sequences and other variations

- Bothenritsan, Michael Homogeneously distributed sequences and Poincaré sequences of integers of sublacunary growth. 85k:11034

## secondary classifications (11K36)

- Coquet, Jean (with Liardet, Pierre) Répartitions uniformes des suites et indépendance statistique. (English summary) [Uniform distributions of sequences and statistical independence] 85d:11072  
 Liardet, Pierre See Coquet, Jean, 85d:11072  
 Nagasaka, Kenji Distribution property of recursive sequences defined by  $u_{n+1} \equiv u_n + u_n^{-1} \pmod{m}$ . 85b:11008

## 11K38 Irregularities of distribution, discrepancy [See also 11Nxx.]

- Beck, Jozsef On an imbalance problem of G. Wagner concerning polynomials. 85j:11089  
 On a problem of K. F. Roth concerning irregularities of point distribution. 85j:11063  
 New results in the theory of irregularities of point distributions. 85m:11046  
 Some upper bounds in the theory of irregularities of distribution. 85d:11075  
 Chen, W. W. L. On irregularities of distribution. II. 85c:11065  
 Dumont, Jean-Marie Discrepance des progressions arithmétiques dans la suite de Morse. (English summary) [Discrepancy of the arithmetical progressions in the Thue-Morse sequence] 85f:11058  
 Proinov, P. D. Points of constant type and upper bounds of the square deviation for a class of infinite sequences. (Russian) 85g:11064  
 Tichy, Robert F. Einige Beiträge zur Gleichverteilung modulo Eins. II. [Some contributions to uniform distribution modulo one. II] 85e:11053  
 Diskrepanz bezüglich gewichteter Mittel und Konvergenzverhalten von Potenzreihen. (English summary) [Discrepancy with respect to weighted means and convergence behavior of power series] 85c:11066  
 Topuzoglu Eralp, Alev Discrepancy in compact abelian groups. 85h:11043



secondary classifications (11K38)

Fleischer, Wilhelm (with Stegbuchner, Hans) Über eine Ungleichung in der Theorie der Gleichverteilung mod. 1. [On an inequality in the theory of uniform distribution mod 1] 85e:11050

Hellekalek, Peter Regularities in the distribution of special sequences. 85e:11053

Maier, W. Farey'sche Folgen und Sektorengitter. [Farey sequences and sector lattices] 85e:11017

Sós, Vera T. Irregularities of partitions: Ramsey theory, uniform distribution. 85h:06012

Stegbuchner, Hans See Fleischer, Wilhelm, 85e:11050

Wang, Yuan Applications of number theory to numerical analysis. 85e:65024

11K41 Continuous,  $p$ -adic and abstract analogues

Dzinyotyiweyi, Heneri A. Murima (with van Rooij, Arnoud C. M.) Non-Archimedean harmonic analysis on topological semigroups. 85e:11064

van Rooij, Arnoud C. M. See Dzinyotyiweyi, Heneri A. Murima, 85e:11064

11K45 Pseudo-random numbers; Monte Carlo methods

Niederreiter, Harald Applications des corps finis aux nombres pseudo-aléatoires. [Finite fields applied to pseudorandom numbers] (See 85g:11009)

11K50 Metric theory of continued fractions [See also 11A55, 11J70.]

Bosma, W. (with Jager, H.; Wiedijk, F.) Some metrical observations on the approximation by continued fractions. 85f:11059

Eratov, K. D. An analogue of a metric theorem of Khinchin on continued fractions. (Russian) 85e:11055

Jager, H. See Bosma, W.; et al., 85f:11059

Wiedijk, F. See Bosma, W.; et al., 85f:11059

secondary classifications (11K50)

Liehl, Bernhard Über die Teilnenner endlicher Kettenbrüche. [On the partial denominators of finite continued fractions] 85e:11011

11K55 Metric theory of other algorithms and expansions; measure and Hausdorff dimension [See also 11N99.]

Matthews, K. R. (with Watts, A. M.) A generalization of Haase's generalization of the Syracuse algorithm. 85i:11068

Mendès France, M. Spirales. [Spirals] 85g:11065

Queffelec, Martine Étude spectrale des substitutions de longueur constante. [Spectral study of substitutions of constant length] (See 85g:11009)

Rajagopal, A. K. See Robertson, James B.; et al., 85g:11066

Robertson, James B. (with Uppuluri, V. R. R.; Rajagopal, A. K.) First digit phenomenon and ergodic theory. 85g:11066

Tricot, Claude Quelques méthodes de packing de l'ensemble triadique de Cantor. [Some packing methods for the Cantor discontinuum] (See 85g:11009)

Uppuluri, V. R. R. See Robertson, James B.; et al., 85g:11066

Watts, A. M. See Matthews, K. R., 85i:11068

secondary classifications (11K55)

Allouche, Jean-Paul Itérations de fonctions unimodales et suites engendrées par automates. [Iterations of unimodal functions and sequences generated by automata] 85f:58082a

(with Cosnard, Michel) Itérations de fonctions unimodales et suites engendrées par automates. (English summary) [Iteration of unimodal functions and sequences generated by automata] 85f:58082b

Berend, Daniel Multi-invariant sets on tori. 85b:11064

Bernik, V. I. Application of the Hausdorff dimension in the theory of Diophantine approximations. (Russian) 85k:11035

Blum, Julius R. Ergodic sequences of integers. 85i:11065

Cosnard, Michel See Allouche, Jean-Paul, 85f:58082b

Falconer, K. J. On a problem of Erdős on sequences and measurable sets. 85e:28008

Gilbert, William J. Complex numbers with three radix expansions. 85e:11013

Helmberg, Gilbert Die Entropie einer linear gebrochenen Funktion. (English summary) [Entropy of a piecewise linear function] 85b:58074

Nakada, Hitoashi On a family of locally finite invariant measures for a cylinder flow. 85e:28024

11K60 Diophantine approximation [See also 11Jxx.]

Bernik, V. I. Application of the Hausdorff dimension in the theory of Diophantine approximations. (Russian) 85k:11035

A proof of Baker's conjecture in the metric theory of transcendental numbers. (Russian) 85j:11090

Borel, J.-P. Sous-groupes de  $\mathbb{R}$  liés à la répartition modulo 1 de suites. (English summary) [Subgroups of  $\mathbb{R}$  related to the distribution modulo 1 of sequences] 85j:11091

Wang, Yuan On Diophantine approximation and approximate analysis. 85k:11036

11K65 Arithmetic functions [See also 11Nxx.]

Elliott, P. D. T. A. A new inequality in the theory of additive arithmetic functions. 85g:11067

On additive arithmetic functions  $f(n)$  for which  $f(an+b) - f(cn+d)$  is bounded. 85b:11066

Hildebrand, Adolf Sur les moments d'une fonction additive. (English summary) [The moments of an additive function] 85e:11067

An asymptotic formula for the variance of an additive function. 85e:11068

Kátai, I.  $\mathcal{M}$ -additive functions. I. 85f:11060

On arithmetic functions with regularity properties. 85e:11069

Kotlyar, B. D. A class of densities of sets of natural numbers. (Russian) 85h:11044

Krilius, Z. The distribution of additive arithmetic functions with shifted arguments. III. (Russian. English and Lithuanian summaries) 85b:11067

Kubilius, Jonas Estimate of the second central moment for any additive arithmetic functions. (Russian. English and Lithuanian summaries) 85g:11068

Lloyd, Stuart P. Ordered prime divisors of a random integer. 85m:11047

Mačulis, A. A lemma on large deviations of arithmetic functions. (Russian. English and Lithuanian summaries) 85e:11056a

Application of sums of multiplicative functions to the study of large deviations. (Russian. English and Lithuanian summaries) 85e:11056b

Manstavicius, E. (with Skrabutėnas, R.) Local distribution laws of additive functions. (Russian. English and Lithuanian summaries) 85g:11069

Russa, I. Z. Generalized moments of additive functions. 85j:11092

Schmid, Johannes The joint distribution of the binary digits of integer multiples. 85j:11093

Shapiro, Harold N. On the Erdős-Wintner theorem of probabilistic number theory. 85e:11070

Skrabutėnas, R. See Manstavicius, E., 85g:11069

Tenenbaum, G. Sur la probabilité qu'un entier possède un diviseur dans un intervalle donné. [On the probability that an integer has a divisor in a given interval] 85m:11048

Timofeev, N. M. Distribution of values of additive functions on the sequence  $\{p+1\}$ . (Russian) 85g:11070

secondary classifications (11K65)

Alladi, Krishnaswami Moments of additive functions and sieve methods. (See 85g:11007)

Ghosh, Amit An extension of the method of moments for additive functions. 85f:11068

Kirschenhofer, Peter (with Tichy, Robert F.) On the distribution of digits in Cantor representations of integers. 85h:11005

Kocherlakota, R. R. An application of probability to elementary number theory. 85h:11004

Kubilius, Jonas Estimation of the second central moment for strongly additive arithmetic functions. (Russian. English and Lithuanian summaries) 85h:11061

Levin, B. V. (with Timofeev, N. M.) Correction: "Comparison theorems for multiplicative functions" [Acta Arith. 42 (1982/83), no. 1, 21-47; MR 84e:10051]. (Russian) 85e:11070

Mauclaire, J.-L. Suites limite-périodiques et théorie des nombres. VII. [Limit-periodic sequences and number theory. VII] 85e:11079

Suites limite-périodiques et théorie des nombres. VIII. [Limit-periodic sequences and number theory. VIII] 85e:11080

Queffelec, Hervé Sur une estimation probabiliste liée à l'inégalité de Bohr. [A probabilistic estimate associated with the Bohr inequality] 85e:43013

Tenenbaum, G. Un rapport sur de récents travaux en théorie analytique des nombres. [A report on recent works in analytic number theory] (See 85i:11001)

Tichy, Robert F. See Kirschenhofer, Peter, 85h:11005

Timofeev, N. M. See Levin, B. V., 85e:11070

11K99 None of the above, but in this section

secondary classifications (11K99)

Halász, Gábor On random multiplicative functions. 85i:11081

Schweiger, F. Invariant measures for piecewise linear fractional maps. 85e:28027

Turner, Peter R. Further revelations on l.s.d. 85m:65039

11Lxx Exponential sums and character sums

11L03 Trigonometric and exponential sums, general

Bourgain, J. Sur le minimum de certaines sommes de cosinus. [On the minimum of certain cosine series] 85f:11061

Ding, Ping See Qi, Ming Gao, (Not in MR)

Fouché, W. L. Arithmetic properties of Heilbronn sums. 85m:11049

Hlawka, Edmund Trigonometrische Interpolation bei Funktionen von mehreren Variablen. II. [Trigonometric interpolation in functions of several variables. II] 85e:11071

Jurkat, W. B. (with Van Horne, J. W.) The uniform central limit theorem for theta sums. 85g:11071

Lehmer, D. H. (with Lehmer, Emma) The sextic period polynomial. 85g:11072

Lehmer, Emma See Lehmer, D. H., 85g:11072

Qi, Ming Gao (with Ding, Ping) A note on estimation of complete trigonometric sums. (Chinese) (Not in MR)

Rešetukha, I. V. Application of a cyclic determinant in the theory of cubic residues. (Russian) 85k:11037

Skopina, M. A. Lebesgue constants of multiple de la Vallée-Poussin sums over polyhedra. (Russian) 85e:11072

Tolmieri, R. The construction of orthonormal bases diagonalizing the discrete Fourier transform. 85e:11057

Van Horne, J. W. See Jurkat, W. B., 85g:11071

secondary classifications (11L03)

Akita, Minoru (with Kano, Takeshi) On the Borel summability of  $\sum_{n=1}^{\infty} n^{-\alpha} \exp(in^{\beta}\theta)$ . 85d:40005

Berardi, L. (with Rizzi, Bruno) Generalized Ramanujan sum for the Stevens indicator. (Italian) 85k:11003

Gurak, S. Minimal polynomials for circular numbers. 85i:11107

Kano, Takeshi See Akita, Minoru, 85d:40005

Rizzi, Bruno See Berardi, L., 85k:11003

Saffari, B. Polynômes trigonométriques et "moyennes croisées". [Trigonometric polynomials and "cross means"] 85c:38034

# 11L05 Gauss and Kloosterman sums; generalizations

Dimitrakoudis, Dimitris Gauss'sche Summen mit Größencharakter. [Gauss sums with Größencharakter] 85d:11076

Evans, Ronald J. Character sum analogues of constant term identities for root systems. 85c:11073

Loxton, J. H. The graphs of exponential sums. 85k:11045

Masclaïre, J.-L. Sommes de Gauss modulo  $p^\alpha$ . I. [Gauss sums modulo  $p^\alpha$ . I] 85f:11063a  
Sommets de Gauss modulo  $p^\alpha$ . II. [Gauss sums modulo  $p^\alpha$ . II] 85f:11063b

secondary classifications (11L05)

Adolphson, Alan Uniqueness of  $\Gamma_p$  in the Gross-Koblitz formula for Gauss sums. 85c:11100

(with Sperber, Steven) Twisted Kloosterman sums and  $p$ -adic Bessel functions. 85c:11002

Dwork, Bernard M. On the Boyarsky principle. 85b:11111

Iwaniec, H. Prime geodesic theorem. 85k:11025

Kubert, Daniel S. (with Lichtenbaum, Stephen) Jacobi-sum Hecke characters and Gauss-sum identities. 85c:11108

Li, Wen Ch'ing Winnie (with Soto-Andrade, Jorge) Barnes' identities and representations of  $GL(2)$ . I. Finite field case. 85k:11065

Barnes' identities and representations of  $GL(2)$ . II. Non-Archimedean local field case. 85k:11066

Lichtenbaum, Stephen Values of  $L$ -functions of Jacobi-sum Hecke characters of abelian fields. 85g:11107

See also Kubert, Daniel S., 85c:11108

Moreno, Carlos J. The method of Hadamard and de la Vallée-Poussin (according to Pierre Deligne). 85a:14017

Queyrut, Jacques Sommes de Gauss et structure galoisienne des anneaux d'entiers. [Gauss sums and Galois structure of rings of integers] (See 84k:10003) (Not in MR)

Soto-Andrade, Jorge See Li, Wen Ch'ing Winnie, 85k:11065

Sperber, Steven See Adolphson, Alan, 85k:12002

Tolimieri, R. The construction of orthonormal bases diagonalizing the discrete Fourier transform. 85c:11057

# 11L10 Jacobsthal and Brewer sums; other complete character sums

Evans, Ronald J. Determinations of Jacobsthal sums. 85d:11077

secondary classifications (11L10)

Hudson, Richard H. Diophantine determinations of  $3^{(p-1)/8}$  and  $5^{(p-1)/4}$ . 85c:11005

Tietäväinen, A. Character sums and coding theory. 85g:11075

Wang, Kai On Maillet determinant. 85m:11072

# 11L40 Estimates on exponential sums and character sums

Arkhipov, G. I. (with Karatsuba, A. A.; Chubarikov, V. N.) New uniform estimates for multiple trigonometric sums. (Russian) 85d:11078

(with Karatsuba, A. A.; Chubarikov, V. N.) Singular cases of the theory of multiple trigonometric sums. (Russian) 85d:11079

Chalk, J. H. H. A new proof of Burgess' theorem on character sums. 85d:11080

Chubarikov, V. N. See Arkhipov, G. I.; et al., 85d:11078 and 85d:11079

Hinz, Jürgen G. The average order of magnitude of least primitive roots in algebraic number fields. 85g:11073

Character sums and primitive roots in algebraic number fields. 85c:11058

Karatsuba, A. A. See Arkhipov, G. I.; et al., 85d:11078; Arkhipov, G. I.; et al., 85d:11079 and Vinogradov, I. M., 85j:11097

Laumon, Gérard Majoration de sommes exponentielles attachées aux hypersurfaces diagonales. [Upper bounds of exponential sums associated with diagonal hypersurfaces] 85g:11074

Lu, Ming Gao An inequality involving trigonometrical polynomials. 85j:11094

A note on estimate of a complete rational trigonometric sum. (Not in MR)

Mit'kin, D. A. Estimates and asymptotic formulas for rational trigonometric sums that are nearly complete. (Russian) 85c:11074

Naranjani, A. M. On Dirichlet characters of polynomials. 85h:11046

Stepanov, S. A. Estimation of rational trigonometric sums along a curve. (Russian) 85m:11050

Rational trigonometric sums along a curve. (Russian. English summary) 85j:11095

Tietäväinen, A. Character sums and coding theory. 85g:11075

Lower bounds for the maximum moduli of certain character sums. 85j:11096

Vinogradov, I. M. (with Karatsuba, A. A.) The method of trigonometric sums in number theory. (Russian) 85j:11097

secondary classifications (11L40)

Arkhipov, G. I. The Hilbert-Kamke problem. (Russian) 85c:11085

Ash, J. Marshall (with Jones, Roger L.; Saffari, B.) Inégalités sur des sommes d'exponentielles. [English summary] [Inequalities for sums of exponentials] 85c:42002

Jones, Roger L. See Ash, J. Marshall; et al., 85c:42002

Karatsuba, A. A. Zeros of the Riemann zeta function. (Russian) 85m:11051

Moser, Ján New corollaries of the approximate functional equation in the theory of the Riemann zeta-function. (Russian. English and Slovak summaries) 85k:11039

Saffari, B. See Ash, J. Marshall; et al., 85c:42002

# 11L99 None of the above, but in this section

secondary classifications (11L99)

Maslika, Paul K. A lattice summation using the mean value theorem for harmonic functions. 85g:82103

# 11Mxx Zeta and $L$ -functions: analytic theory

## 11M06 $\zeta(s)$ and $L(s, \chi)$

Balasubramanian, Ramachandran (with Ramachandra, K.) On the zeros of the Riemann zeta function and  $L$ -series. II. 85k:11038

Deshouillers, Jean-Marc (with Iwaniec, H.) Power mean-values for Dirichlet's polynomials and the Riemann zeta-function. II. 85g:11076

Ghosh, Amit On the Riemann zeta function—mean value theorems and the distribution of  $|S(T)|$ . 85c:11059

Iwaniec, H. See Deshouillers, Jean-Marc, 85g:11076

Knowles, Ian Eigenvalue problems and the Riemann zeta function. 85j:11098a

Eigenvalue problems and the Riemann zeta function. II. 85j:11098b

Moser, Ján A theorem of A. Selberg in the theory of the Riemann zeta-function. (Russian. English and Slovak summaries) 85i:11049

A Hardy-Littlewood lemma in the theory of the Riemann zeta-function. (Russian. English and Slovak summaries) 85j:11099

New corollaries of the approximate functional equation in the theory of the Riemann zeta-function. (Russian. English and Slovak summaries) 85k:11039

Properties of the sequence  $\{Z(t_n(r))\}$  in the theory of the Riemann zeta-function. (Russian. English and Slovak summaries) 85k:11040

Motohashi, Yoichi A note on the approximate functional equation for  $\zeta^2(s)$ . 85g:11077

A note on the approximate functional equation for  $\zeta^2(s)$ . II. 85g:11078

Ramachandra, K. See Balasubramanian, Ramachandran, 85k:11038

Rane, V. V. On an approximate functional equation for Dirichlet  $L$ -series. 85b:11068

Singh, R. J. (with Verma, D. P.) Some series involving Riemann zeta function. 85b:11069

Stankus, E. P. A remark on the coefficients of Laurent series of the Riemann zeta function. (Russian) 85d:11081

Turganaliyev, R. T. An asymptotic formula for the mean value of a fractional power of the Dirichlet  $L$ -function assuming the extended Riemann hypothesis. (Russian. Kazakh summary) 85j:11100

An asymptotic formula for mean values of fractional order of the Dirichlet  $L$ -function. (Russian) 85j:11101

Verma, D. P. See Singh, R. J., 85b:11069

secondary classifications (11M06)

Conrey, Brian Zeros of derivatives of Riemann's  $\xi$  function on the critical line. II. 85c:11060

Egami, Shigeki On the analytic continuation of certain Dirichlet series. 85f:11064

Golubeva, E. P. Representation of large numbers by positive ternary quadratic forms of a special type. (Russian) 85b:11028

Grupp, F. On Dirichlet series attached to cusp forms and the Siegel-zero. 85b:11042

Gutwiller, Martin C. Stochastic behavior in quantum scattering. 85d:11059

Lou, Shi Tuo (with Yao, Qi) Conjecture of Chowla-Cowles on Apéry numbers. (Chinese) (Not in MR)

Moreno, Carlos J. The value of  $L(\frac{1}{2}, \chi)$  for abelian  $L$ -functions of complex quadratic fields. 85h:11073

Stark, E. L. Eine Würfelkonstruktion:  $\zeta(3)$  und der Turm zu Babel. [A cube construction:  $\zeta(3)$  and the Tower of Babel] 85j:11021

Yao, Qi See Lou, Shi Tuo, (Not in MR)

## 11M20 Real zeros of $L(s, \chi)$ ; results on $L(1, \chi)$

McCurley, Kevin S. Explicit zero-free regions for Dirichlet  $L$ -functions. 85k:11041

secondary classifications (11M20)

Balasubramanian, Ramachandran (with Ramachandra, K.) On the zeros of the Riemann zeta function and  $L$ -series. II. 85k:11038

Ramachandra, K. See Balasubramanian, Ramachandran, 85k:11038

## 11M26 Nonreal zeros of $\zeta(s)$ and $L(s, \chi)$ ; Riemann and other hypotheses

Anderson, Robert Joseph Simple zeros of the Riemann zeta function. 85c:11075

Conrey, Brian Zeros of derivatives of Riemann's  $\xi$  function on the critical line. II. 85c:11060

Gonek, S. M. Mean values of the Riemann zeta function and its derivatives. 85f:11063

Karatsuba, A. A. Zeros of the Riemann zeta function in short intervals of the critical line. (Russian) 85c:11061

Zeros of the Riemann zeta function. (Russian) 85m:11051

Zeros of the function  $\zeta(s)$  on short intervals of the critical line. (Russian) 85i:11070

van de Lune, J. (with te Riele, H. J. J.) On the zeros of the Riemann zeta function in the critical strip. III. 85c:11062

(with te Riele, H. J. J.) Recent progress on the numerical verification of the Riemann hypothesis. 85j:11102

Matiyasevich, Yu. V. Yet another machine experiment in support of Riemann's conjecture. 85g:11079

Moser, Ján Sharpening of the Hardy-Littlewood theorem on the density of zeros of the function  $\zeta(\frac{1}{2} + it)$ . (Russian. English and Slovak summaries) 85j:11104

Improvement of the Hardy-Littlewood theorem on the density of zeros of the function  $\zeta(\frac{1}{2} + it)$ . (Russian) 85j:11105

The structure of a Hardy-Littlewood-Ingham formula in the theory of the Riemann zeta-function. (Russian. English and Slovak summaries) 85h:11047

- A biquadratic sum in the theory of the Riemann zeta-function. (Russian. English and Slovak summaries) **85j:11103**  
 te Riele, H. J. J. See van de Lune, J., **85e:11063** and **85j:11102**  
 Zhang, Nan Yue (with Zhang, Shun Yan) Two consequences of the Riemann hypothesis. (Chinese. English summary) **85d:11082**  
 Zhang, Shun Yan See Zhang, Nan Yue, **85d:11082**

secondary classifications (11M26)

- Balasubramanian, Ramachandran (with Ramachandra, K.) On the zeros of the Riemann zeta function and  $L$ -series. II. **85k:11038**  
 Pints, J. On the remainder term of the prime number formula and the zeros of Riemann's zeta-function. (See **85i:11001**)  
 Ramachandra, K. See Balasubramanian, Ramachandran, **85k:11038**

### 11M35 Hurwitz and Lerch zeta functions

- Rane, V. V. On Hurwitz zeta function. **85b:11070**

secondary classifications (11M35)

- Cassou-Noguès, Pierrette Prolongement de certaines séries de Dirichlet. [Continuation of certain Dirichlet series] **85f:11079**  
 Rosen, Kenneth H.  $L$ -series for quadratic forms at  $s = 1$ . I. Applications of a theorem of Söngen. **85g:11097a**  
 $L$ -series for quadratic forms at  $s = 1$ . II. The modular functions that arise. **85g:11097b**

### 11M41 Other Dirichlet series and zeta functions {For local and global ground fields, see 11R42, 11R52, 11S40, 11S45; for algebro-geometric methods, see 14G10; see also 11E45, 11F70, 11F72.}

- Apostol, Tom M. (with Vu, Thiennu H.) Dirichlet series related to the Riemann zeta function. **85j:11106**  
 Balakrishnan, Uckath-Variyath On the mean value of Dirichlet series. **85g:11080**  
 Egami, Shigeki On the analytic continuation of certain Dirichlet series. **85f:11064**  
 Jutila, Matti Transformation formulae for Dirichlet polynomials. **85j:11107**  
 Laurinćikas, Antanas The universality theorem. (Russian. French and Lithuanian summaries) **85d:11083**  
 Meretov, S. Ya. Natural bounds of Euler products. II. (Russian. English summary) **85h:11048**  
 Robertson, M. M. See Zucker, I. J., **85d:11064**  
 Vu, Thiennu H. See Apostol, Tom M., **85j:11106**  
 Zucker, I. J. (with Robertson, M. M.) Further aspects of the evaluation of  $\sum_{(m,n \neq 0)} (am^2 + bnm + cn^2)^{-s}$ . **85d:11084**

secondary classifications (11M41)

- Cassou-Noguès, Pierrette Prolongement de certaines séries de Dirichlet. [Continuation of certain Dirichlet series] **85f:11079**  
 Hafner, James L. The distribution and average order of the coefficients of Dedekind  $\zeta$  functions. **85g:11106**  
 Explicit estimates in the arithmetic theory of cusp forms and Poincaré series. **85f:11032a**  
 Zeros on the critical line for Dirichlet series attached to certain cusp forms. **85f:11032b**  
 Moreno, Carlos J. (with Shahidi, Freydoon) The fourth moment of Ramanujan  $\tau$ -function. **85i:11039**  
 Reich, Axel Dirichletreihen und gleichverteilte Folgen. (English summary) [Dirichlet series and sequences with uniform distribution] **85g:11061**  
 Rosen, Kenneth H.  $L$ -series for quadratic forms at  $s = 1$ . I. Applications of a theorem of Söngen. **85g:11097a**  
 $L$ -series for quadratic forms at  $s = 1$ . II. The modular functions that arise. **85g:11097b**  
 Shahidi, Freydoon See Moreno, Carlos J., **85i:11039**  
 Takhtadzhyan, L. A. See Vinogradov, A. I., **85j:11057**  
 Toyozumi, Masao On the values of the Dedekind zeta function of an imaginary quadratic field at  $s = 1/3$ . **85c:11111**  
 Venkov, A. B. Spectral theory of automorphic functions. (Russian) **85j:11060a**  
 Spectral theory of automorphic functions. **85j:11060b**  
 Vinogradov, A. I. (with Takhtadzhyan, L. A.) The zeta function of the additive divisor problem and spectral expansion of the automorphic Laplacian. (Russian. English summary) **85j:11057**

### 11M56 Sieves [See mainly 11N35.]

- Alladi, Krishnaswami Moments of additive functions and sieve methods. (See **85g:11007**)

secondary classifications (11M56)

- Motohashi, Yoichi ★ Lectures on sieve methods and prime number theory. **85k:11045**

### 11Nxx Multiplicative number theory

- Benoliel, C. See Rossi, F. S.; et al., **85g:11081**  
 Crăciunag, Aurora See Rossi, F. S.; et al., **85g:11081**  
 Crăciunag, P. See Rossi, F. S.; et al., **85g:11081**  
 Lesky, P. See Rossi, F. S.; et al., **85g:11081**  
 Lie, M. See Rossi, F. S.; et al., **85g:11081**  
 Lippmann, H. See Rossi, F. S.; et al., **85g:11081**  
 Mangeron, Dumitru Ion See Rossi, F. S.; et al., **85g:11081**  
 Rossi, F. S. (with Santos, J. P. de Oliveira; Crăciunag, P.; Benoliel, C.; Mangeron, Dumitru Ion; Crăciunag, Aurora; Lesky, P.; Lie, M.; Lippmann, H.) Contributions

to number theory and applications. I. Characterization of composite natural numbers with respect to prime numbers. (Italian. English and Romanian summaries) **85g:11081**

- Santos, J. P. de Oliveira See Rossi, F. S.; et al., **85g:11081**

### 11N05 Distribution of primes

- Balog, A. On the fractional part of  $p^{\theta}$ . **85e:11063**  
 Daboussi, Hédi Sur le théorème des nombres premiers. (English summary) [On the prime number theorem] **85f:11065**  
 Friedlander, John B. Moments of sifted sequences. **85h:11049**  
 Goldston, D. A. On a result of Littlewood concerning prime numbers. II. **85k:11042**  
 The second moment for prime numbers. **85j:11108**  
 See also Heath-Brown, D. R., **85e:11064**  
 Hanumanthachari, J. See Subrahmanya Sastri, V. V., **85i:11073**  
 Heath-Brown, D. R. (with Goldston, D. A.) A note on the differences between consecutive primes. **85e:11064**  
 Hensley, Douglas The sum of  $\alpha^{f(n)}$  over integers  $n \leq x$  with all prime factors between  $\alpha$  and  $y$ . **85i:11071**  
 Huxley, Martin An application of the Fouvry-Iwaniec theorem. **85k:11043**  
 Pints, J. On the remainder term of the prime number formula and the zeros of Riemann's zeta-function. (See **85i:11001**)  
 Qiu, Zhuo Ming On the difference between consecutive prime numbers. (Chinese) **85f:11066**  
 Révész, Sz. Gy. Irregularities in the distribution of prime ideals. I. **85i:11072**  
 Robin, Guy Estimation de la fonction de Tchebychev  $\theta$  sur le  $k$ -ième nombre premier et grandes valeurs de la fonction  $\omega(n)$  nombre de diviseurs premiers de  $n$ . [Estimate of the Chebyshev function  $\theta$  on the  $k$ th prime number and large values of the number of prime divisors function  $\omega(n)$  of  $n$ ] **85j:11109**  
 Subrahmanya Sastri, V. V. (with Hanumanthachari, J.) On some aspects of multiplicative arithmetic functions. **85i:11073**  
 Tulyaganova, M. I. Averaged law of the distribution of prime vectors in integral lattices. (Russian) **85f:11067**

secondary classifications (11N05)

- Lagarias, J. C. (with Odlyzko, A. M.) New algorithms for computing  $\pi(x)$ . **85j:11182**  
 Lloyd, Stuart P. Ordered prime divisors of a random integer. **85m:11047**  
 Meyer, Ulf Eine Summe über Differenzen aufeinanderfolgender Fastprimzahlen  $P_2$ . [A sum on differences of consecutive almost primes  $P_2$ ] **85j:11113**  
 Odlyzko, A. M. See Lagarias, J. C., **85j:11182**  
 Parry, William An analogue of the prime number theorem for closed orbits of shifts of finite type and their suspensions. **85c:58089**  
 Stakėnas, V. Local theorems for integer-valued multiplicative functions with local conditions on powers of primes. (Russian. English and Lithuanian summaries) **85j:11120**

### 11N13 Primes in progressions [See also 11B25.]

- Fouvry, Étienne Une nouvelle majoration de la fonction  $\pi_2(x)$ . [New upper bounds for the function  $\pi_2(x)$ ] **85c:11076**  
 Autour du théorème de Bombieri-Vinogradov. [On the Bombieri-Vinogradov theorem] **85m:11052**  
 McCurley, Kevin S. Explicit estimates for the error term in the prime number theorem for arithmetic progressions. **85e:11065**  
 Pints, J. (with Salerno, Saverio) Irregularities in the distribution of primes in arithmetic progressions. I. **85j:11110**  
 Salerno, Saverio See Pints, J., **85j:11110**  
 Sirot, E. R. Laws for the distribution of primes of the form  $P = [t^c] = [n^d]$  in arithmetic progressions. (Russian) **85i:11074**  
 Tulyaganova, M. I. Matrix analogue of Dirichlet's theorem on prime numbers. (Russian) **85i:11075**

### 11N25 Distribution of integers with specified multiplicative constraints

- Canfield, E. Rodney The asymptotic behavior of the Dickman-de Bruijn function. **85j:11082**  
 Elliott, P. D. T. A. On the distribution of the roots of certain congruences and a problem for additive arithmetic functions. **85i:11076**  
 Heath-Brown, D. R. The square sieve and consecutive square-free numbers. **85h:11050**  
 Hensley, Douglas The number of factorizations of numbers less than  $x$  into divisors greater than  $y$ . **85j:11111**  
 Laurinćikas, Antanas Large deviations in Hooley's theorem. (Russian. French and Lithuanian summaries) **85j:11112**  
 Matsumoto, Kohji A remark on Smith's result on a divisor problem in arithmetic progressions. (Not in MR)  
 Meyer, Ulf Eine Summe über Differenzen aufeinanderfolgender Fastprimzahlen  $P_2$ . [A sum on differences of consecutive almost primes  $P_2$ ] **85j:11113**  
 Shiu, P. On square-full integers in a short interval. **85k:11044**  
 Suryanarayana, D. On the order of the error function of the square-full integers. II. **85b:11071**  
 Tenenbaum, G. Un rapport sur de récents travaux en théorie analytique des nombres. [A report on recent works in analytic number theory] (See **85i:11001**)

secondary classifications (11N25)

- Brindza, B. The functions  $r_n(n)$  and problems of Paul Erdős. (Hungarian. English summary) **85e:11012**  
 De Koninck, Jean-Marie (with Ivić, Aleksandar) The distribution of the average prime divisor of an integer. **85j:11116**  
 Dubins, Lester E. A gloss on a theorem of Furstenberg. **85c:11015**



- Erdős, Paul (with Pomerance, Carl) An analogue of Grimm's problem of finding distinct prime factors of consecutive integers. 85b:11072
- Ivić, Aleksandar See De Koninck, Jean-Marie, 85j:11116
- Meyer, Jacques René Représentation multiplicative des entiers à l'aide de l'ensemble  $P+1$ . II. [Multiplicative representation of integers using the set  $P+1$ . II] 85d:11018b
- Représentation multiplicative des entiers à l'aide de l'ensemble  $P+1$ . [Multiplicative representation of integers using the set  $P+1$ ] 85d:11018a
- Pomerance, Carl See Erdős, Paul, 85b:11072
- Stewart, C. L. On divisors of Fermat, Fibonacci, Lucas and Lehmer numbers. III. 85g:11021
- 11N30 Turán theory**
- Ghosh, Amit An extension of the method of moments for additive functions. 85f:11068
- secondary classifications (11N30)
- Révész, Sz. Gy. Irregularities in the distribution of prime ideals. I. 85i:11073
- 11N32 Primes represented by polynomials; other multiplicative structure of polynomial values**
- Gafurov, N. The sum of powers of divisors of quadratic polynomials. (Russian) 85m:11053
- McCurley, Kevin S. Prime values of polynomials and irreducibility testing. 85e:11066
- secondary classifications (11N32)
- Goldston, D. A. On a result of Littlewood concerning prime numbers. II. 85k:11042
- 11N35 Sieves**
- Hinz, Jürgen G. Some applications of sieve methods in algebraic number fields. 85m:11054
- Kubilius, Jonas Estimation of the second central moment for strongly additive arithmetic functions. (Russian. English and Lithuanian summaries) 85k:11051
- Motohashi, Yoichi ★ Lectures on sieve methods and prime number theory. 85k:11045
- Peral Alonso, Juan Carlos Sieve series in number theory. (Spanish) (See 85i:00012)
- Preisemann, E. Sur une inégalité de Montgomery-Vaughan. [A Montgomery-Vaughan inequality] 85e:11067
- Xie, Sheng Gang On the  $k$ -twin primes problem. 85j:11114
- The generalized twin prime problem. (Chinese) 85j:11115
- secondary classifications (11N35)
- Ding, Ping See Zhang, Ming Yao, 85d:11090
- Friedlander, John B. Moments of sifted sequences. 85b:11049
- Gerver, Joseph L. Factoring large numbers with a quadratic sieve. 85e:11123
- Harman, Glyn Diophantine approximation with a prime and an almost-prime. 85h:11036
- Heath-Brown, D. R. The square sieve and consecutive square-free numbers. 85h:11050
- Diophantine approximation with square-free numbers. 85j:11072
- Kristina, Z. The distribution of additive arithmetic functions with shifted arguments. III. (Russian. English and Lithuanian summaries) 85b:11067
- Liu, Ming Chit On binary equations. 85b:11036
- Zhang, Ming Yao (with Ding, Ping) An improvement to the Schnirelman constant. (Chinese summary) 85d:11090
- 11N37 Asymptotic results on arithmetic functions**
- Chidambaramswamy, J. (with Sitaramachandra Rao, R.) On arithmetical functions associated with higher order divisors. 85f:11069
- De Koninck, Jean-Marie (with Ivić, Aleksandar) The distribution of the average prime divisor of an integer. 85j:11116
- Dress, François Sur une somme liée à la fonction de Möbius. [On a sum related to the Möbius function] 85e:11068
- Erdős, Paul (with Ivić, Aleksandar) On sums involving reciprocals of certain arithmetical functions. 85g:11083
- (with Pomerance, Carl) An analogue of Grimm's problem of finding distinct prime factors of consecutive integers. 85b:11072
- Falsiev, R. F. Two new identities in number theory. (Russian. Tajiki summary) 85b:11073
- Hardy, G. E. (with Subbarao, M. V.) Corrigendum and addendum: "Semi- $r$  free and  $r$ -free integers—a unified approach" [Canad. Math. Bull. 25 (1982), no. 3, 273–290; MR 83k:10084]. 85j:11117
- Haslewood, Donald G. Sums over numbers with restricted prime factors. 85e:11069
- Ivić, Aleksandar See Erdős, Paul, 85g:11083 and De Koninck, Jean-Marie, 85j:11116
- Jutila, Matti On the divisor problem for short intervals. 85i:11077
- Kanehwa, Ryuji On the multiplicative partition function. 85d:11085
- Kristel, Ekkehard Divisor problems and powerful numbers. 85g:11084
- Levin, B. V. (with Timofeev, N. M.) Sums of multiplicative functions. (Russian) 85h:11052
- (with Timofeev, N. M.) Correction: "Comparison theorems for multiplicative functions" [Acta Arith. 42 (1982/83), no. 1, 21–47; MR 84c:10051]. (Russian) 85e:11070
- Makysa, M. On the distance between consecutive prime ideal numbers in sectors. 85d:11066
- Mauclaire, J.-L. (with Murata, Leo) On  $q$ -additive functions. II. 85j:11118
- Murata, Leo See Mauclaire, J.-L., 85j:11118
- Nicolas, Jean-Louis Autour de formules dues à A. Selberg. [On some formulas due to A. Selberg] 85i:11078
- Petites valeurs de la fonction d'Euler. (English summary) [Small values of the Euler function] 85h:11063
- Nowak, Werner-Georg On a problem of S. Chowla and H. Walum. 85e:11071
- Pavlov, A. I. The number and cyclic structure of permutations of certain classes. (Russian) 85m:11055
- Pomerance, Carl See Erdős, Paul, 85b:11072
- Rieger, G. J. On a theorem of S. Uchiyama concerning the largest squarefree divisor. 85j:11119
- Robin, Guy Sur l'ordre maximum de la fonction somme des diviseurs. [The maximum order of the sum of divisors function] 85f:11070
- Shao, Pin Cong Further study of the problem of the distribution of the values of a class of number-theoretic functions. (Chinese) (Not in MR)
- Shirokov, B. M. Distribution of values of arithmetic functions in residue classes. (Russian) 85b:11074
- Sitaramachandra Rao, R. See Chidambaramswamy, J., 85f:11069
- Sita Ramalah, V. (with Suryanarayana, D.) The number of representations of an integer as the sum of a prime and an element in a set. (Italian summary) 85k:11046
- (with Suryanarayana, D.) Asymptotic results on sums of some multiplicative functions. II. 85e:11077
- Staklens, V. Local theorems for integer-valued multiplicative functions with local conditions on powers of primes. (Russian. English and Lithuanian summaries) 85j:11120
- Subbarao, M. V. See Hardy, G. E., 85j:11117
- Suryanarayana, D. On some asymptotic formulae of S. Wigert. 85d:11087
- See also Sita Ramalah, V., 85e:11077 and 85k:11046
- Timofeev, N. M. See Levin, B. V., 85e:11070 and 85h:11052
- Varbanets, P. D. (with Zhanbyrbayeva, U. B.) The problem of divisors of Gaussian numbers in an arithmetic progression. (Russian. Kazakh summary) 85k:11047
- Warlimont, Richard Ramanujan expansions of multiplicative functions. 85d:11088
- Zhanbyrbayeva, U. B. See Varbanets, P. D., 85k:11047
- secondary classifications (11N37)
- Buttsworth, R. N. An inclusion-exclusion transform. 85k:05007
- Chalk, J. H. H. Incomplete residue systems to a composite modulus. 85g:11029
- Cook, Roger J. (with Raghavan, Srinivasacharya) Indefinite quadratic polynomials of small signature. 85m:11024
- Elliott, P. D. T. A. On additive arithmetic functions  $f(n)$  for which  $f(an+b) - f(cn+d)$  is bounded. 85b:11066
- (with Moreno, Carlos J.; Shahidi, Freydoon) On the absolute value of Ramanujan's  $\tau$ -function. 85f:11030
- Gafurov, N. The sum of powers of divisors of quadratic polynomials. (Russian) 85m:11053
- Gerth, Frank, III Asymptotic behavior of number fields with prescribed  $l$ -class numbers. 85e:11083
- Golubeva, E. P. The length of a period of quadratic irrationality. (Russian) 85f:11044
- Hensley, Douglas The sum of  $\alpha^{f(n)}$  over integers  $n \leq x$  with all prime factors between  $\alpha$  and  $y$ . 85i:11071
- Kristel, Ekkehard Die Werteverteilung der Anzahl der nicht-isomorphen abelschen Gruppen endlicher Ordnung und ein verwandtes zahlentheoretisches Problem. [The value distribution of the number of nonisomorphic abelian groups of finite order and a related number-theoretic problem] 85e:11072
- Laurinćikas, Antanas Large deviations in Hooley's theorem. (Russian. French and Lithuanian summaries) 85j:11112
- Moreno, Carlos J. See Elliott, P. D. T. A.; et al., 85f:11030
- Murty, G. Sri Rama Chandra See Sitaramachandra Rao, R., 85h:11055
- Murty, M. Ram (with Murty, V. Kumar) On the number of groups of a given order. 85i:11079
- Murty, V. Kumar See Murty, M. Ram, 85i:11079
- Pomerance, Carl On the longest simple path in the divisor graph. 85d:05154
- Queffelec, Hervé Sur une estimation probabiliste liée à l'inégalité de Bohr. [A probabilistic estimate associated with the Bohr inequality] 85e:43013
- Raghavan, Srinivasacharya See Cook, Roger J., 85m:11024
- Sahu, Hajari (with Somayajulu, B. S. K. R.) On the natural densities of  $\{\varphi^*(m)\}$  and  $\{\sigma^*(m)\}$ . 85e:11007
- Shahidi, Freydoon See Elliott, P. D. T. A.; et al., 85f:11030
- Sitaramachandra Rao, R. (with Murty, G. Sri Rama Chandra) On a problem of Evelyn and Linfoot in the additive theory of numbers. 85h:11055
- Somayajulu, B. S. K. R. See Sahu, Hajari, 85e:11007
- Suryanarayana, D. On the order of the error function of the square-full integers. II. 85b:11071
- Taylor, M. J. On the equidistribution of Frobenius in cyclic extensions of a number field. 85f:11074
- Tulyaganova, M. I. Distribution of simple vectors in degenerate lattices. (Russian) 85g:11017
- 11N45 Asymptotic results on counting functions for algebraic and topological structures**
- Bhatt, S. S. See Sambandham, M., 85j:11121
- Kristel, Ekkehard Die Werteverteilung der Anzahl der nicht-isomorphen abelschen Gruppen endlicher Ordnung und ein verwandtes zahlentheoretisches Problem. [The value distribution of the number of nonisomorphic abelian groups of finite order and a related number-theoretic problem] 85e:11072
- Murty, M. Ram (with Murty, V. Kumar) On the density of various classes of groups. 85k:11048
- (with Murty, V. Kumar) On the number of groups of a given order. 85i:11079
- Murty, V. Kumar See Murty, M. Ram, 85i:11079 and 85k:11048
- Nicholls, P. J. A lattice point problem in hyperbolic space. 85f:11071
- Sambandham, M. (with Bhatt, S. S.) On the average number of real roots of a random algebraic equation. 85j:11121

secondary classifications (11N45)

- Bender, Edward A. (with Richmond, L. B.) The asymptotic enumeration of rooted convex polyhedra. **85m:05004**  
 Kaczkowski, J. Some remarks on factorization in algebraic number fields. **85j:11141**  
 Kirschenhofer, Peter Subblock occurrences in the  $q$ -ary representation of  $n$ . **85d:11013**  
 Richmond, L. B. See Bender, Edward A., **85m:05004**

#### 11N56 Rate of growth of arithmetic functions

- McCurley, Kevin S. Explicit estimates for  $\theta(x; 3, 1)$  and  $\psi(x; 3, 1)$ . **85g:11085**  
 Nowak, Werner-Georg An analogue to a conjecture of S. Chowla and H. Wulm. **85m:11056**

#### 11N60 Distribution functions associated with additive and positive multiplicative functions

- Brillhart, John (with Erdős, Paul; Morton, Patrick) On sums of Rudin-Shapiro coefficients. II. **85i:11080**  
 Erdős, Paul See Brillhart, John; et al., **85i:11080**  
 Halász, Gabor On random multiplicative functions. **85i:11081**  
 Morton, Patrick See Brillhart, John; et al., **85i:11080**

#### 11N64 Other results on the distribution of values or the characterization of arithmetic functions

- Erdős, Paul (with Sárközy, A.) On almost divisibility properties of sequences of integers. I. **85b:11075**  
 Narkiewicz, W. Distribution of coefficients of Eisenstein series in residue classes. **85g:11086**  
 Pinta, J. Oscillatory properties of  $M(x) = \sum_{n \leq x} \mu(n)$ . III. **85k:11049**  
 Sárközy, A. See Erdős, Paul, **85b:11075**

secondary classifications (11N64)

- Zhang, Nan Yue (with Zhang, Shun Yan) Two consequences of the Riemann hypothesis. (Chinese. English summary) **85d:11082**  
 Zhang, Shun Yan See Zhang, Nan Yue, **85d:11082**

#### 11N69 Distribution of integers in special residue classes

- Hudson, Richard H. On the first occurrence of certain patterns of quadratic residues and nonresidues. **85g:11087**  
 Sárközy, A. On quasi-uniform distribution of sequences of integers. **85m:11057**

secondary classifications (11N69)

- Lenstra, H. W., Jr. Introduction. **85a:11007**  
 Divisors in residue classes. **85b:11118**  
 Murty, M. Ram An analogue of Artin's conjecture for abelian extensions. **85j:11161**

#### 11N80 Generalized primes and integers

- Borel, J.-P. Sur le prolongement des fonctions  $\zeta$  associées à un système de nombres premiers généralisés de Beurling. [Continuation of  $\zeta$ -functions associated with a Beurling generalized prime number system] **85e:11073**  
 Diamond, Harold G. A number theoretic series of I. Kasara. **85c:11078**

#### 11N99 None of the above, but in this section

- Berndt, Bruce C. (with Joshi, Padmini T.) ★ Chapter 9 of Ramanujan's second notebook. **85e:11074**  
 Hildebrand, Adolf On a problem of Erdős and Alladi. **85i:11082**  
 Joshi, Padmini T. See Berndt, Bruce C., **85e:11074**  
 Maucclair, J.-L. Suites limite-périodiques et théorie des nombres. VII. [Limit-periodic sequences and number theory. VII] **85c:11079**  
 Suites limite-périodiques et théorie des nombres. VIII. [Limit-periodic sequences and number theory. VIII] **85c:11080**  
 Sitaramachandra Rao, R. (with Subbarao, M. V.) Transformation formulae for multiple series. **85i:11083**  
 Subbarao, M. V. See Sitaramachandra Rao, R., **85i:11083**

secondary classifications (11N99)

- Brillhart, John (with Erdős, Paul; Morton, Patrick) On sums of Rudin-Shapiro coefficients. II. **85i:11080**  
 Byrnes, J. S. (with Giroux, A.; Shisha, Oved) Riemann sums and improper integrals of step functions related to the prime number theorem. **85f:40002**  
 Erdős, Paul See Brillhart, John; et al., **85i:11080**  
 Giroux, A. See Byrnes, J. S.; et al., **85f:40002**  
 Morton, Patrick See Brillhart, John; et al., **85i:11080**  
 Shisha, Oved See Byrnes, J. S.; et al., **85f:40002**  
 Shorey, T. N. Applications of linear forms in logarithms to binary recursive sequences. **85f:11009**

#### 11Pxx Additive number theory; partitions

##### 11P05 Waring's problem and variants, sums of different powers

- Balasubramanian, Ramachandran (with Mossogi, C. J.) An improved upper bound for  $G(k)$  in Waring's problem for relatively small  $k$ . **85i:11084**  
 Gordon, Basil (with Hughes, Kimball Newton) Congruences for  $r_s(n)$ . **85c:11081**  
 Hughes, Kimball Newton See Gordon, Basil, **85c:11081**  
 Lu, Ming Gao (with Shan, Zun) A problem of Waring-Goldbach's type. (Chinese) (Not in MR)  
 Mossogi, C. J. See Balasubramanian, Ramachandran, **85i:11084**  
 Recknagel, Winfried Über die Verteilung der pythagoreischen  $k$ -Tupel. [On the distribution of Pythagorean  $k$ -tuples] **85h:11054**  
 Revoy, Philippe Sur les sommes de quatre cubes. (English summary) [On sums of four cubes] **85m:11058**  
 Romani, F. Computations concerning Waring's problem for cubes. **85g:11088**  
 Shan, Zun See Lu, Ming Gao, (Not in MR)  
 Thanigasalam, K. Addendum and corrigendum to the paper: "On sums of powers and a related problem" [Acta Arith. **38** (1980), no. 2, 125-141; MR **81i:10061**]. **85e:11075**  
 Todorov, P. G. The Waring formula for the power sums. **85j:11122**

secondary classifications (11P05)

- Car, Mireille Sommes de deux carrés dans  $\mathbb{F}_q[X]$  et problèmes de diviseurs. (English summary) [Sums of two squares in  $\mathbb{F}_q[X]$  and divisor problems] **85e:11101**  
 Cook, Roger J. Pairs of additive equations. II. Large odd degree. **85c:11086**  
 Pairs of additive equations. III. Quintic equations. **85c:11087**  
 Pairs of additive equations. IV. Sextic equations. **85m:11061**  
 Delsell, Charles N. Continuous sums of squares of forms. **85g:03086**  
 Ewell, John A. A formula for Ramanujan's tau function. **85g:11036**  
 Golubeva, E. P. Representation of large numbers by positive ternary quadratic forms of a special type. (Russian) **85b:11028**  
 Hamm, Gerhard Ein  $(m+1)$ -dimensionales Gitterpunktproblem. [An  $(m+1)$ -dimensional lattice point problem] **85j:11123**  
 Kashina, E. A. See Voronetskii, A. B., **85h:11022**  
 Laumon, Gérard Majoration de sommes exponentielles attachées aux hypersurfaces diagonales. [Upper bounds of exponential sums associated with diagonal hypersurfaces] **85g:11074**  
 Makowski, Andrzej A cubic identity and its consequences. **85b:11022**  
 Voronetskii, A. B. (with Kashina, E. A.) Sums of squares in algebraic number fields. (Russian) **85h:11022**  
 Walies, Anna An asymptotic formula for the number of simultaneous representations of two integers by linear and quadratic forms. (Russian) **85b:11029**

##### 11P16 Additive questions concerning $r$ -free numbers

- Chen, Ming Can the Goldbach conjecture be proved by elementary means? (Chinese) (Not in MR)  
 Ding, Ping See Zhang, Ming Yao, (Not in MR)  
 Lu, Ming Gao (with Shan, Zun) A problem of Waring-Goldbach's type. (Chinese) (Not in MR)  
 Murty, G. Sri Rama Chandra See Sitaramachandra Rao, R., **85h:11055**  
 Sitaramachandra Rao, R. (with Murty, G. Sri Rama Chandra) On a problem of Evelyn and Linfoot in the additive theory of numbers. **85h:11055**  
 Shan, Zun See Lu, Ming Gao, (Not in MR)  
 Zhang, Ming Yao (with Ding, Ping) An improved estimate of the Shnirel'man constant. (Chinese)

##### 11P21 Lattice points in specified regions

- Babaeva, R. An asymptotic formula for the number of lattice points on a second-order surface. (Russian. Tajiki summary) **85c:11062**  
 Cherkaskii, V. L. See Zamanskii, L. Ya., **85c:11063**  
 Golubeva, E. P. Asymptotic distribution of lattice points, belonging to given residue classes, on hyperboloids of a special type. (Russian) **85e:11076**  
 Hamma, Gerhard Ein  $(m+1)$ -dimensionales Gitterpunktproblem. [An  $(m+1)$ -dimensional lattice point problem] **85j:11123**  
 Lagrange, Jean Points du plan dont les distances mutuelles sont rationnelles. [Points in the plane with rational mutual distances] (See **85g:11009**)  
 Nowak, Werner-Georg Zu einem mehrdimensionalen Gitterpunktproblem. [On a multidimensional lattice point problem] **85d:11089**  
 On a certain sum connected with the circle problem. **85i:11085**  
 Zur Gitterpunktlehre der euklidischen Ebene. (English summary) [On the theory of lattice points in the Euclidean plane] **85j:11124**  
 Skraganov, M. M. Brillouin zones and geometry of numbers. (Russian. English summary) **85j:11125**  
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## 11R27 Units and factorization

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Coleman, Robert F. Local units modulo circular units. 85b:11068

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- Ishii, Hidenori Congruences between cusp forms and the fundamental units of real quadratic number fields. **85g:11038**
- Klyachko, A. A. Modular forms and representations of symmetric groups. (Russian) **85f:11034**
- Leutbecher, Armin (with Martinet, Jacques) Constante de Lenstra et corps de nombres euclidiens. [Lenstra's constant and Euclidean number fields] **85e:11084**
- Martinet, Jacques See Leutbecher, Armin, **85e:11084**
- Miki, Hiroo (with Sato, Hirotaka) Leopoldt's conjecture and Reiner's theorem. **85g:11104**
- Morton, Patrick Density results for the 2-classgroups and fundamental units of real quadratic fields. **85m:11067**
- Sato, Hirotaka See Miki, Hiroo, **85g:11104**
- Scarowsky, Manny On units of certain cubic fields and the Diophantine equation  $x^3 + y^3 + z^3 = 3$ . **85i:11022**
- Schoof, R. J. Quadratic fields and factorization. **85g:11118b**
- Uehara, Tsuyoshi Construction of certain real quadratic fields. **85b:11085**
- Zantema, H. Class numbers and units. **85g:11118a**
- Zaupper, T. A note on unique factorization in imaginary quadratic fields. **85h:11058**
- Zhang, Liang Cheng On a principle of reduction of the units of fields  $\mathbb{Q}(\sqrt[m_1]{m_1}, \dots, \sqrt[m_r]{m_r})$ . (Chinese) **85k:11054**
- Zhang, Xian Ke See Feng, Ke Qin, **85e:11081**

## 11R29 Class numbers, class groups, discriminants

- Agoh, T. A note on the Bernoulli numbers and the class number of real quadratic fields. **85j:11143**
- (Albert, A. Adrian) See Zhang, Xian Ke, (Not in MR)
- Antoniadis, Jannis A. Über die Kennzeichnung zweiklassiger imaginär-quadratischer Zahlkörper durch Lösungen diophantischer Gleichungen. [On the characterization of two-class imaginary quadratic number fields via the solutions of Diophantine equations] **85g:11098**
- Azuhata, Takashi (with Ichimura, Humio) On the divisibility problem of the class numbers of algebraic number fields. **85a:11021**
- Cohen, Henri (with Lenstra, H. W., Jr.) Heuristics on class groups of number fields. **85j:11144**
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- Cuoco, Albert A. Generalized Iwasawa invariants in a family. **85k:11060**
- Feng, Ke Qin Arithmetical characterization of algebraic number fields with given ideal class group. (Chinese) (Not in MR)
- Fröhlich, Albrecht ★ Central extensions, Galois groups, and ideal class groups of number fields. **85e:11101**
- Gerth, Frank, III An application of matrices over finite fields to algebraic number theory. **85b:11094**
- Hao, Fred H. (with Parry, Charles J.) Generalized Bernoulli numbers and  $m$ -regular primes. **85h:11062**
- Ichimura, Humio See Aruhata, Takashi, **85a:11021**
- Jaulent, Jean-François 5-classes infinitésimales d'un corps de nombres algébriques. [Infinitesimal 5-classes of an algebraic number field] **85g:11099**
- Lenstra, H. W., Jr. See Cohen, Henri, **85j:11144** and (**85g:11007**)
- Leonard, Philip A. (with Williams, Kenneth S.) An observation on binary quadratic forms of discriminant  $-32q$ . **85g:11100**
- (with Williams, Kenneth S.) On the divisibility of the class number of  $\mathbb{Q}(\sqrt{-pq})$  by 16. **85b:11095**
- Llorente, Pascual (with Nart, Enric; Vila, Núria) Discriminants of number fields defined by trinomials. **85m:11070**
- Lu, Hong Wen Congruences for the class number of quadratic fields. **85b:11096**
- Martinet, Jacques Sur l'ouvrage de Hasse: *Über die Klassenzahl abelscher Zahlkörper*. [On Hasse's *On the class number of abelian number fields*] **85m:11071**
- Metsänkylä, Tauno Maillet's matrix and irregular primes. **85j:11145**
- Meyer, Curt Automorphe Funktionen und Zahlentheorie. [Automorphic functions and number theory] **85a:11022**
- Mollin, R. A. On the cyclotomic polynomial. **85c:11102**
- Monsky, Paul  $p$ -ranks of class groups in  $\mathbb{Z}_p$ -extensions. **85c:11103**
- Nakano, Shin On the construction of certain number fields. **85a:11023**
- On the 2-rank of the ideal class groups of pure number fields. **85j:11146**
- Nart, Enric See Llorente, Pascual; et al., **85m:11070**
- Okada, S. Generalized Maillet determinant. **85j:11147**
- Parry, Charles J. See Hao, Fred H., **85h:11062**
- Rush, David E. An arithmetic characterization of algebraic number fields with a given class group. **85c:11104**
- Šliwa, Jan On the nonessential discriminant divisor of an algebraic number field. **85b:11097**
- Uehara, Tsuyoshi On class numbers of imaginary quadratic and quartic fields. **85e:11090**
- Vaughan, Theresa P. Corrigenda: "The discriminant of a quadratic extension of an algebraic field" [Math. Comp. **40** (1983), no. 162, 685–707; MR **84c:12006**] **85k:11061**
- Vila, Núria See Llorente, Pascual; et al., **85m:11070**
- Wang, Kai On Maillet determinant. **85m:11072**
- Williams, Kenneth S. See Leonard, Philip A., **85b:11095** and **85g:11100**
- Yokoi, Hideo On the Diophantine equation  $x^2 - py^2 = \pm 4q$  and the class number of real subfields of a cyclotomic field. **85b:11098**
- Zantema, H. Global restrictions on ramification in number fields. **85g:11101**
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- Cappell, Sylvain E. (with Shaneson, Julius L.) Class numbers and periodic smooth maps. **85e:57049**

- Chinburg, T. Multiplicative Galois structure. (See **85h:11001**)
- Cohn, Harvey (with Lagarias, J. C.) On the existence of fields governing the 2-invariants of the classgroup of  $\mathbb{Q}(\sqrt{dp})$  as  $p$  varies. **85b:11063**
- Ernvall, Reijo Generalized irregular primes. **85g:11023**
- Feng, Ke Qin The Artin–Artin–Chowla formula for cubic cyclic number fields. (Chinese. English summary) **85a:11018**
- Gerth, Frank, III The 4-class ranks of quadratic fields. **85j:11137**
- Godwin, H. J. On quartic fields of signature one with small discriminant. II. **85i:11092a**
- Corrigenda: "On quartic fields of signature one with small discriminant. II". **85i:11092b**
- Imura, Kiyooki On the genus group of algebraic number fields. **85e:11093**
- Ireland, K. (with Small, D.) A note on Bernoulli–Goss polynomials. **85f:11093**
- Kaplan, Pierre (with Williams, Kenneth S.) On the strict class number of  $\mathbb{Q}(\sqrt{7p})$  modulo 16,  $p \equiv 1 \pmod{8}$  prime. **85g:11093**
- Kislavsky, H. Some nonsemisimple Iwasawa modules. **85g:11095**
- Korte, Ulrike Class numbers of definite binary quadratic lattices over algebraic function fields. **85m:11023**
- Lagarias, J. C. See Cohn, Harvey, **85b:11063**
- Lu, Hong Wen Real quadratic fields with large class number. (Chinese) (Not in MR)
- The continued fractions, class number and the others. **85i:11091**
- Mimura, Yoshio On the class number of a unit lattice over a ring of real quadratic integers. **85d:11035**
- Nakano, Shin On ideal class groups of algebraic number fields. **85j:11150**
- Renault, G. (with Simões, M. E. Antunes) Anneaux de Dedekind dont le groupe des classes est fini. [Dedekind rings whose class group is finite] **85d:13028**
- Schertz, Reinhard Eine Bemerkung zu einer Arbeit von C. Meyer über imaginär-quadratische Körper mit der Klassenzahl 2. [Comment on a work of C. Meyer on imaginary quadratic fields with class number 2] **85b:11084**
- Shaneson, Julius L. See Cappell, Sylvain E., **85e:57049**
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- Sprindžuk, V. G. ★ Классические диофантовы уравнения от двух неизвестных. (Russian) [Classical Diophantine equations in two unknowns] **85d:11022**
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- Washio, T. On class numbers of algebraic function fields defined by  $y^2 = x^3 + ax$  over  $\text{GF}(p)$ . **85m:11083**
- Watabe, Mutsuo On certain cubic fields. IV. **85b:11087**
- Williams, Kenneth S. See Kaplan, Pierre, **85g:11093**
- Yamaguchi, Itaru Über die Einheiten des Kreiskörpers der  $l^n$ -ten Einheitswurzeln. [The units of the cyclotomic field of the  $l^n$ th roots of unity] **85e:11069**
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- Zantema, H. Class numbers and units. **85g:11118a**

## 11R32 Galois theory

- Bergé, Anne-Marie À propos du genre de l'anneau des entiers d'une extension. [On the genus of the ring of integers of an extension] **85h:11063**
- Brinkhuis, Jan Galois modules and embedding problems. **85j:11148**
- Ch'ou, Yung Ch'iu A remark on Scholz's abelian crossings. **85j:11149**
- Ding, Shi Sun An arithmetic characterization of Galois extensions. (Chinese) **85m:11073**
- Hürlimann, W. A cyclotomic Hilbert 90 theorem. **85j:11150**
- Jaulent, Jean-François Sur la théorie des genres dans une extension cyclique de degré  $l^m$  d'un corps de nombres métabellienne sur un sous-corps. [On the theory of genera in a metabelian cyclic extension of degree  $l^m$  of a number field over a subfield] **85h:11064**
- Klingen, Norbert Einbettungsprobleme mit proendlichem Kern und ihre Lösbarkeit bei Beschränkung der Verzweigung. [Embedding problems with profinite kernel and their solvability with restricted ramification] **85j:11151**
- Kwon, Soung H. Corps de nombres de degré 4 de type alterné. (English summary) [Number fields of degree four of alternating type] **85j:11152**
- van der Linden, F. J. The computation of Galois groups. **85b:11078**
- Madden, Daniel J. (with Valentini, Robert C.) The group of automorphisms of algebraic function fields. **85i:11096**
- Matzat, B. Heinrich Konstruktion von Zahlkörpern mit der Galoisgruppe  $M_{12}$  über  $\mathbb{Q}(\sqrt{-5})$ . [Construction of number fields with the Galois group  $M_{12}$  over  $\mathbb{Q}(\sqrt{-5})$ ] **85g:11102**
- Opolka, Hans ★ Galoisdarstellungen und Galoiscohomologie von Zahlkörpern. (German) [Galois representations and Galois cohomology of number fields] **85c:11105**
- Extensions of number fields defined by cohomology groups. **85b:11099**
- Pierce, R. S. (with Vinsonhaler, C.) Realizing algebraic number fields. **85b:11100**
- Polevitskaya, O. On the imbedding problem with an arbitrary kernel of order  $p^n$ . (Russian. English and Estonian summaries) **85a:11074**
- Ribenboim, Paulo Active sums of profinite groups. **85j:11153**
- Sonn, Jack Direct summands of class groups. **85e:11091**
- Steinke, Günther ★ Über Auflösungen zahlentheoretischer Knoten. (German) [On resolutions of number-theoretic knots] **85g:11103**
- Valentini, Robert C. See Madden, Daniel J., **85i:11096**
- Vinsonhaler, C. See Pierce, R. S., **85b:11100**

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- Brinkhuis, Jan  $K_2$  and Galois extensions of fields. **85j:12008**
- Carroll, Joseph E. (with Kislavsky, H.) On the Iwasawa invariants of certain  $\mathbb{Z}_p$ -extensions. **85c:11099**
- Cohen, Arjeh M. (with Zantema, H.) A computation concerning doubly transitive permutation groups. **85k:20011**
- Faddeev, D. K. Galois theory (in the Mathematics Institute of the Academy of Sciences). (Russian) **85j:12002**
- Fröhlich, Albrecht ★ Galois module structure of algebraic integers. **85h:11067**



- Geyer, Wolf-Dieter Jede endliche Gruppe ist Automorphismengruppe einer endlichen Erweiterung  $K/Q$ . [Every finite group is the automorphism group of a finite extension  $K/Q$ ] 85c:12003
- Jannsen, Uwe Galoismoduln mit Hasse-Prinzip. [Galois modules with Hasse principle] 85b:11002
- Jaulent, Jean-François Sur la théorie des genres dans les tours métabeliennes. [On the theory of genera of metabelian towers] 85b:11002
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- S-classes infinitésimales d'un corps de nombres algébriques. [Infinitesimal S-classes of an algebraic number field] 85g:11009
- Killevsky, H. See Carroll, Joseph E. 85c:11009
- Massey, Richard Un critère numérique de résolubilité de problèmes de plongement. [A numerical criterion of solvability for embedding problems] 85m:11008
- Mataat, B. Belarich Konstruktion von Zahl- und Funktionenkörpern mit vorgegebener Galoisgruppe. [Construction of number and function fields with given Galois group] 85j:11164
- Miyake, Katsuya On central extensions of a Galois extension of algebraic number fields. 85d:11009
- Wingberg, Kay Freie Produktzerlegungen von Galoisgruppen und Iwasawa-Invarianten für  $p$ -Erweiterungen von  $Q$ . [Free product decompositions of Galois groups and Iwasawa invariants for  $p$ -extensions of  $Q$ ] 85c:11006
- Zantema, H. Global restrictions on ramification in number fields. 85g:11101
- See also Cohen, Arjeh M. 85k:20011
- 11R33 Integral representations related to algebraic numbers; Galois module structure of rings of integers** [See also 20C10.]
- Cassou-Nogues, Ph. Structure galoisienne des anneaux d'entiers d'extensions sauvagement ramifiées. II. [Galois structure of the rings of integers of wildly ramified extensions. II] 85d:11005
- (with Taylor, M. J.) Les constantes locales et globales de l'équation fonctionnelle de la fonction  $L$  d'Artin d'une représentation symplectique. [Local and global constants of the functional equation of the Artin  $L$ -function of a symplectic representation] 85j:11154
- (with Taylor, M. J.) Opérations d'Adams sur certains groupes de Grothendieck. [Adams operations on certain Grothendieck groups] (See 85g:11009)
- (with Taylor, M. J.) Constante de l'équation fonctionnelle de la fonction  $L$  d'Artin d'une représentation symplectique et modérée. [Constant of the functional equation of the Artin  $L$  function of a tame symplectic representation] 85d:11006
- Chateleain, Danièle Modules d'entiers d'une extension abélienne sur son ordre maximal. [Modules of integers of an abelian extension over its maximal order] 85h:11005
- Chinburg, T. Multiplicative Galois structure. (See 85i:11001)
- Multiplicative Galois module structure. 85j:11155
- Cougnard, Jean Remarques sur l'arithmétique de certaines extensions métacycliques. [Remarks on the arithmetic of certain metacyclic extensions] 85h:11006
- Everest, G. R. The distribution of normal integral generators. 85c:11100
- Diophantine approximation and the distribution of normal integral generators. 85c:11197
- Fröhlich, Albrecht ★ Galois module structure of algebraic integers. 85b:11007
- Jaulent, Jean-François Sur la  $l$ -structure galoisienne des idéaux ambiges dans une extension métacyclique de degré  $nl$  sur le corps des rationnels. [On the Galois  $l$ -structure of the ambiguous ideals in a metacyclic extension of degree  $nl$  over the rational field] 85h:11008
- Kawamoto, Fumimori On normal integral bases. 85m:11074
- Miki, Hiroo (with Sato, Hirotaka) Leopoldt's conjecture and Reiner's theorem. 85g:11104
- Paris, Colette Bases sur  $Z$  des idéaux primaires canoniques d'un corps  $K$ , extension de  $Q$ , cyclique, de degré premier impair  $l$ , et approximations  $p$ -adiques des racines d'un polynôme fondamental  $f$  de  $K$ . [Bases over  $Z$  of canonical primary ideals of a field  $K$ , cyclic extension of  $Q$  of odd prime degree  $l$  and  $p$ -adic approximations of the roots of a fundamental polynomial  $f$  of  $K$ ] 85h:11009
- Queyruet, Jacques Sommes de Gauss et structure galoisienne des anneaux d'entiers. [Gauss sums and Galois structure of rings of integers] (See 84k:10003)
- Structure galoisienne des groupes d'unités et des groupes des classes d'un anneau d'entiers. [Galois structure of unit groups and class groups of rings of integers] (See 85g:11009)
- Modules radicaux sur des ordres arithmétiques. [Radical modules over arithmetic orders] 85c:11002
- Structures galoisiennes. [Galois structures] (See 85i:11001)
- Sato, Hirotaka See Miki, Hiroo. 85g:11104
- Taylor, M. J. Structure galoisienne des anneaux d'entiers des extensions abéliennes d'un corps quadratique imaginaire. [Galois structure of rings of integers of abelian extensions over an imaginary quadratic field] 85m:11075
- Relative Galois module structure of rings of integers and elliptic functions. 85h:11070
- On a conjecture of C. T. C. Wall for group determinants. 85b:11101
- See Cassou-Nogues, Ph. 85d:11006; 85j:11154 and (85g:11009)
- secondary classifications (11R33)
- Bergé, Anne-Marie À propos du genre de l'anneau des entiers d'une extension. [On the genus of the ring of integers of an extension] 85h:11003
- Chinburg, T. On the arithmetic of two constructions of Salem numbers. 85h:11006
- Chung, L. Y. Derivation modules of group rings and integers of cyclotomic fields. 85h:13015
- Emmelen, Michel Rang  $p$ -adique de groupes de  $S$ -unités d'un corps de nombres. (English summary) [ $p$ -adic rank of groups of  $S$ -units in a number field] 85f:11078
- Gras, Marie-Nicole  $Z$ -bases d'entiers  $1, \theta, \theta^2, \theta^3$  dans les extensions cycliques de degré 4 de  $Q$ . [ $Z$ -bases of integers  $1, \theta, \theta^2, \theta^3$  in cyclic extensions of degree 4 of  $Q$ ] 85h:11059
- Levy, Lawrence S. Krull-Schmidt uniqueness fails dramatically over subrings of  $Z \oplus \dots \oplus Z$ . 85c:13006
- McCulloh, Leon R. Galois module structure of elementary abelian extensions. 85d:11093
- Opolka, Hans Der Schur-Multiplikator in der algebraischen Zahlentheorie. [The Schur multiplier in algebraic number theory] 85b:12011
- Park, Seung Ahn The unit group of the integral group ring  $ZD_n$ . II. 85j:16006
- Plesken, Wilhelm ★ Group rings of finite groups over  $p$ -adic integers. 85c:16019
- Wang, Yuan (with Xu, Guang Shan; Zhang, Rong Xiao) On a number-theoretic method of numerical integration in a multidimensional space. II. (Chinese. English summary) 85f:11049
- Xu, Guang Shan See Wang, Yuan; et al. 85f:11049
- Zhang, Rong Xiao See Wang, Yuan; et al. 85f:11049
- 11R34 Galois cohomology** [See also 12Gxx, 16A16.]
- Fein, Burton (with Guralnick, Robert; Schacher, Murray) Relative Brauer groups of global fields. 85g:11105
- Guralnick, Robert See Fein, Burton; et al. 85g:11105
- Jannsen, Uwe Galoismoduln mit Hasse-Prinzip. [Galois modules with Hasse principle] 85b:11102
- Katsuyama, Shin-ichi On the Galois cohomology groups of  $C_K/D_K$ . 85i:11097
- Nguyễn-Quang-Dô Thông Formations de classes et modules d'Iwasawa. [Class formation and Iwasawa modules] 85j:11150
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- secondary classifications (11R34)
- Klingen, Norbert Einbettungsprobleme mit proendlichem Kern und ihre Lösbarkeit bei Beschränkung der Verzweigung. [Embedding problems with profinite kernel and their solvability with restricted ramification] 85j:11151
- Nguyễn-Quang-Dô Thông Formulations algébriques de la conjecture de Leopoldt et applications. [Algebraic formulations of the Leopoldt conjecture, and applications] 85j:11142
- Opolka, Hans Extensions of number fields defined by cohomology groups. 85b:11099
- Pascoya Hermosa, Francisco M. On two open problems in the algebraic theory of quadratic forms over a field. (Spanish. English summary) 85g:11031
- Queyruet, Jacques Structure galoisienne des groupes d'unités et des groupes des classes d'un anneau d'entiers. [Galois structure of unit groups and class groups of rings of integers] (See 85g:11009)
- Yamashita, Hiroshi The second cohomology groups of the group of units of a  $Z_p$ -extension. 85j:11140
- Zantema, H. Global restrictions on ramification in number fields. 85g:11101
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- 11S40 Zeta functions and  $L$ -functions [See also 11M41.]

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 Laumon, Gérard Les constantes des équations fonctionnelles des fonctions  $L$  sur un corps global de caractéristique positive. (English summary) [The constants in the functional equations of  $L$ -functions over a global field of positive characteristic] 85j:11170  
 Sinnott, W. On the  $\mu$ -invariant of the  $\Gamma$ -transform of a rational function. 85g:11112  
 secondary classifications (11S40)  
 Amice, Y. Dilogarithme  $p$ -adique, d'après R. Coleman. [ $p$ -adic dilogarithm, after R. Coleman] 85j:12011  
 Barsky, Daniel Sur la série d'Iwasawa attachée à un caractère de Dirichlet. [The Iwasawa series associated with a Dirichlet character] 85g:11094  
 Emsalem, Michel Comportement des fonctions  $L$   $p$ -adiques au voisinage de zéro. [Behavior of  $p$ -adic  $L$ -functions in the neighborhood of zero] 85h:11071  
 Gras, Georges Erratum: "On the construction of abelian  $p$ -adic  $L$  functions" [Seminar Delange-Pisot-Poitou, 20th year: 1978/1979. Number theory, Part 2, Exp. No. 22, Secrétariat Math., Paris, 1980; MR 81k:12016]. (French) 85j:11160  
 Kalyushnyĭ, V. N. The power moment problem on a  $p$ -adic disk. (Russian) 85b:11077

- 11S45 Algebras and orders, and their zeta functions [See also 11R52, 11R54, 16A18, 16A39.]

Oliver, Robert M. Class groups of cyclic  $p$ -groupes. 85d:11103

#### secondary classifications (11S45)

Bushnell, Collin J. (with Reiner, Irving) Left- $v$ -right zeta-functions. 85j:11163  
 Platonov, V. P. (with Rapinchuk, A. S.) Multiplicative structure of division algebras over number fields and the Hasse norm principle. (Russian) 85j:11162  
 Rapinchuk, A. S. See Platonov, V. P., 85j:11162  
 Reiner, Irving See Bushnell, Collin J., 85j:11163

- 11S50 Equations

#### secondary classifications (11S50)

Sinnott, W. On the  $\mu$ -invariant of the  $\Gamma$ -transform of a rational function. 85g:11112

- 11S70  $K$ -theory of local fields

Brylinski, Jean-Luc Théorie du corps de classes de Kato et revêtements abéliens de surfaces. (English summary) [Kato's class field theory and abelian coverings of surfaces] 85f:11088  
 Harrison, D. K. On ordered groups, division rings and fields. 85m:11087  
 Kato, Kazuya Class field theory and algebraic  $K$ -theory. 85f:11089  
 Residue homomorphisms in Milnor  $K$ -theory. 85g:11113  
 Merkur'ev, A. S. On the torsion in  $K_2$  of local fields. 85c:11121  
 Torsion in the group  $K_2$  for a local field. (Russian) 85b:11110  
 The group  $K_2$  for a local field. (Russian) 85m:11088

#### secondary classifications (11S70)

Parshin, A. N. Local class field theory. (Russian) 85m:11086

- 11S80 Other analytic theory (analogues of beta and gamma functions,  $p$ -adic integration, etc.)

Adolphson, Alan Uniqueness of  $\Gamma_p$  in the Gross-Koblitz formula for Gauss sums. 85e:11100  
 Diamond, Jack  $p$ -adic gamma functions and their applications. 85h:11077  
 Dwork, Bernard M. A note on the  $p$ -adic gamma function. 85j:11171  
 On the Boyarsky principle. 85b:11111  
 van Hamme, Lucien The  $p$ -adic gamma function and the congruences of Atkin and Swinnerton-Dyer. 85j:11172  
 Kalyushnyĭ, V. N. A  $p$ -adic analogue of the Hurwitz zeta function. (Russian) 85h:11078  
 Koblitz, Neal  $p$ -adic analog of Heine's hypergeometric  $q$ -series. 85g:11114  
 Krishnamurthy, E. V. Hensel's methods in linear algebraic computing. 85j:11173  
 Li, Wen Ch'ing Winnie Barnes' identities and representations of  $GL(2)$ . II. Non-Archimedean local field case. 85k:11066  
 Novoselov, E. V. ★ Введение в полиадический анализ. (Russian) [Introduction to polyadic analysis] 85m:11089  
 Yamasaki, Tadashi Integrals defining singular series. 85f:11090

#### secondary classifications (11S80)

Adolphson, Alan (with Sperber, Steven) Twisted Kloosterman sums and  $p$ -adic Bessel functions. 85k:12002  
 On the Dwork trace formula. 85j:11176  
 Daly, James (with Phillips, Keith) On singular integrals, multipliers,  $\mathfrak{f}^1$  and Fourier series—a local field phenomenon. 85c:43008  
 Dwork, Bernard M. Puiseux expansions. 85i:11099  
 Endo, Mikihiro The kernel of the Iwasawa homomorphism. 85d:11091  
 Koblitz, Neal The number of points on certain families of hypersurfaces over finite fields. 85d:14034  
 Panchshkin, A. A. Le prolongement  $p$ -adique analytique des fonctions  $L$  de Rankin. [Analytic  $p$ -adic continuation of Rankin's  $L$ -functions] 85j:11061  
 Phillips, Keith See Daly, James, 85c:43008  
 Sperber, Steven See Adolphson, Alan, 85k:12002  
 Tateoka, Jun Equivalence of Fourier multipliers on local fields. 85k:43008

- 11S99 None of the above, but in this section

Prestel, Alexander (with Roquette, Peter) ★ Formally  $p$ -adic fields. 85m:11090  
 Roquette, Peter See Prestel, Alexander, 85m:11090

- 11Txx Finite fields and commutative rings (number-theoretic aspects)

- 11T06 Polynomials: irreducibility, factorization, distribution of values

Car, Mireille Sommes de deux carrés dans  $\mathbb{F}_q[X]$  et problèmes de diviseurs. (English summary) [Sums of two squares in  $\mathbb{F}_q[X]$  and divisor problems] 85e:11101  
 Sommes de carrés dans  $\mathbb{F}_q[X]$ . [Sums of squares in  $\mathbb{F}_q[X]$ ] 85i:11102  
 Polynômes de  $\mathbb{F}_q[X]$  ayant un diviseur de degré donné. [Polynomials of  $\mathbb{F}_q[X]$  with a divisor of given degree] 85i:11103  
 Le théorème de Chen pour  $\mathbb{F}_q[X]$ . [Chen's theorem for  $\mathbb{F}_q[X]$ ] 85j:11174  
 Chatterjee, Debabrata On solving the quadratic congruence  $ax^2 + bx + c \equiv 0 \pmod{p}$ . 85b:11112  
 Chery, Jørgen Additive theory for  $\mathbb{F}_q[x]$  by probability methods. 85m:11091  
 Classen, Henk L. More on the group of units in  $GF(q)[x]/(a(x))$ . 85f:11091  
 Cullmann, Georges Détermination des  $n$ -uples initiaux permettant de développer les chaînes engendrées par un polynôme irréductible sur un  $\mathbb{C}_q(p)$  et n'admettant pas un élément primitif du corps d'extension comme racine. (English summary) [Determining the initial  $n$ -tuples that allow one to develop chains generated by an irreducible polynomial on  $GF(p)$  that does not have a primitive element of the extension field as a root] 85j:11175  
 Effinger, Gove A Goldbach theorem for polynomials of low degree over odd finite fields. 85f:11092  
 Feng, Gui Liang A discriminant for a polynomial of degree 3 over  $GF(2^m)$  has three distinct roots in  $GF(2^m)$ . (Chinese. English summary) 85b:11113  
 von zur Gathen, Joachim (with Kaltofen, Erich) Polynomial-time factorization of multivariate polynomials over finite fields. 85d:11104  
 Ireland, K. (with Small, D.) A note on Bernoulli-Goss polynomials. 85f:11093  
 Kaltofen, Erich See von zur Gathen, Joachim, 85d:11104  
 Kang, Shin Won Remarks on finite fields. 85j:11176  
 Small, D. See Ireland, K., 85f:11093  
 Sun, Zong Ming The roots of quadratic equations over a field of  $p^k$  ( $p \geq 3$ ) elements. (Chinese) 85i:11104  
 Thomas, Emery On the zeta function for function fields over  $\mathbb{F}_p$ . 85i:11105  
 Varshamov, R. R. A general method of synthesis for irreducible polynomials over Galois fields. (Russian) 85j:11177  
 Wiesenbauer, J. On polynomial functions over residue class rings of  $\mathbb{Z}$ . 85b:11114

#### secondary classifications (11T06)

Dunn, K. B. (with Lidl, R.) Iterative roots of functions over finite fields. 85k:39006  
 Kocielný, Caslav Software approach to computing in finite fields with applications to error-correcting coding techniques and cryptography. (Polish. English and Russian summaries) 85j:11006  
 Krishnamurthy, E. V. (with Murthy, V. K.) Fast iterative division of  $p$ -adic numbers. 85a:11004  
 Lauer, Markus Generalized  $p$ -adic constructions. 85c:11024  
 Lehmer, D. H. (with Lehmer, Emma) The sextic period polynomial. 85g:11077  
 Lehmer, Emma See Lehmer, D. H., 85g:11077  
 Lidl, R. See Dunn, K. B., 85k:39006  
 Matthews, R. Permutation polynomials over algebraic number fields. 85j:11136  
 Murthy, V. K. See Krishnamurthy, E. V., 85a:11004

- Niederreiter, Harald Applications des corps finis aux nombres pseudo-aléatoires. [Finite fields applied to pseudorandom numbers] (See 85g:11009)  
 Wilkerson, Clarence A primer on the Dickson invariants. 85c:55017

# 11T21 Cyclotomy, exponential sums; Gaussian and character sums

- Adolphson, Alan On the Dwork trace formula. 85j:11178  
 Belov, N. V. See Rau, V. G.; et al., 85j:11181  
 Cohen, Stephen D. Quadratic residues and character sums over fields of square order. 85j:11179  
 Diamond, Harold G. (with Gerth, Frank, III; Vaaler, J.) Gauss sums and finite Fourier transforms. 85i:11106  
 Gerth, Frank, III See Diamond, Harold G.; et al., 85i:11106  
 Gurek, S. Minimal polynomials for circular numbers. 85j:11107  
 Hudson, Richard H. (with Williams, Kenneth S.) Binomial coefficients and Jacobi sums. 85m:11092  
 Ilyukhin, V. V. See Rau, V. G.; et al., 85j:11181  
 Li, Wen Ch'ing Winnie (with Soto-Andrade, Jorge) Barnes' identities and representations of  $GL(2)$ . I. Finite field case. 85k:11005  
 Möllin, R. A. Corrigenda: "On the cyclotomic polynomial" [J. Number Theory 17 (1983), no. 2, 165-175; MR 85c:11102]. 85j:11180  
 Parkhomov, L. G. See Rau, V. G.; et al., 85j:11181  
 Rau, V. G. (with Parkhomov, L. G.; Ilyukhin, V. V.; Belov, N. V.) Simple criteria for the existence of Cochran cyclotomic sets. (Russian) 85j:11181  
 Soto-Andrade, Jorge See Li, Wen Ch'ing Winnie, 85k:11005  
 Vaaler, J. See Diamond, Harold G.; et al., 85i:11106  
 Williams, Kenneth S. See Hudson, Richard H., 85m:11092

## secondary classifications (11T21)

- Evans, Ronald J. Character sum analogues of constant term identities for root systems. 85c:11073  
 Tietäväinen, A. Lower bounds for the maximum moduli of certain character sums. 85j:11096

# 11T30 Structure theory

- Hofje, Herbert On Cohn functions. 85b:11115

# 11T41 Equations

- Reed, I. S. See Truong, T. K., 85k:11067  
 Truong, T. K. (with Reed, I. S.) Golomb's conjecture is true for certain classes of finite fields. 85k:11067

## secondary classifications (11T41)

- Adleman, Leonard M. (with McDonnell, Robert) An application of higher reciprocity to computational number theory. (See 85k:68007)  
 McDonnell, Robert See Adleman, Leonard M., (85k:68007)  
 Orzech, Morris Forms of low degree in finite fields. 85j:11046

# 11T71 Algebraic coding theory; cryptography

- Tafasman, M. A. (with Vlăduț, S. G.; Zink, Th.) Modular curves, Shimura curves, and Goppa codes, better than Varshamov-Gilbert bound. 85i:11108  
 Vlăduț, S. G. See Tafasman, M. A.; et al., 85i:11108  
 Zink, Th. See Tafasman, M. A.; et al., 85i:11108

## secondary classifications (11T71)

- Beth, Thomas (with Jungnickel, Dieter) Variations on seven points: an introduction to the scope and methods of coding theory and finite geometries. 85b:05044  
 Brickell, Ernest F. (with Simmons, Gustavus J.) A status report on knapsack based public key cryptosystems. 85f:94013  
 DeLaurentis, John M. A further weakness in the common modulus protocol for the RSA cryptosystem. 85m:94025  
 Huguet, Roger, Llorenç Coding theory as a mathematical object: regular codes and association schemes. 85k:94035  
 Jennings, S. M. Multiplexed sequences: some properties of the minimum polynomial. 85b:94012  
 Jungnickel, Dieter See Beth, Thomas, 85b:05044  
 Mignotte, Maurice How to share a secret. 85a:94025  
 Müller, Winfried B. (with Nöbauer, Winfried) Some remarks on public-key cryptosystems. 85c:94018  
 Nöbauer, Winfried See Müller, Winfried B., 85c:94018  
 Reutenauer, Christophe Sur un théorème de Schützenberger. (English summary) [On a theorem of Schützenberger] 85f:94021  
 Simmons, Gustavus J. See Brickell, Ernest F., 85f:94013

# 11T99 None of the above, but in this section

- Cohen, Stephen D. Likeable functions in finite fields. 85c:11102  
 Goldman, Jay R. Numbers of solutions of congruences: Poincaré series for strongly nondegenerate forms. 85d:11105  
 Reed, I. S. See Truong, T. K. (Not in MR)  
 Truong, T. K. (with Reed, I. S.) Establishment of Golomb's conjecture in some types of finite fields. (Chinese) (Not in MR)

## secondary classifications (11T99)

- Gallian, Joseph A. (with Van Buskirk, James) The number of homomorphisms from  $Z_m$  into  $Z_n$ . 85b:13019  
 Lovász, L. (with Schrijver, A.) Remarks on a theorem of Rédei. 85e:51017  
 Schrijver, A. See Lovász, L., 85e:51017  
 Van Buskirk, James See Gallian, Joseph A., 85b:13019

# 11Uxx Connections with logic

## 11U05 Decidability [See also 03B25.]

### secondary classifications (11U05)

- Cegielski, Patrick La théorie élémentaire de la divisibilité est finiment axiomatisable. (English summary) [The elementary theory of divisibility of natural numbers is finitely axiomatisable] 85j:03042  
 Jones, James P. (with Matiyasevich, Yu. V.) Register machine proof of the theorem on exponential Diophantine representation of enumerable sets. 85i:03139  
 Matiyasevich, Yu. V. Studies in certain algorithmic problems of algebra and number theory. (Russian) 85k:01040  
 See also Jones, James P., 85i:03139

## 11U09 Model theory

### secondary classifications (11U09)

- Cantor, David G. (with Roquette, Peter) On Diophantine equations over the ring of all algebraic integers. 85j:11036  
 Jarden, Moshe The elementary theory of normal Frobenius fields. 85e:12004  
 Poizat, Bruno Une théorie de Galois imaginaire. [An imaginary Galois theory] 85c:03063  
 Prestel, Alexander (with Roquette, Peter)  $\star$  Formally  $p$ -adic fields. 85m:11090  
 Roquette, Peter See Cantor, David G., 85j:11036 and Prestel, Alexander, 85m:11090  
 Wang, Shi Qiang A class of commutative rings with the Goldbach property. (Chinese. English summary) 85c:11064

## 11U10 Nonstandard arithmetic [See also 03H15.]

- Basarab, Șerban A. Roth's theorem: nonstandard aspects. (Romanian) 85b:11116

### secondary classifications (11U10)

- Frey, Gerhard Nonstandard arithmetic and application to height functions. 85m:11035

# 11Yxx Computational number theory [See also 11-04.]

### secondary classifications (11Yxx)

- van Emde Boas, P. Machine models, computational complexity and number theory. 85d:68028  
 Schroeder, M. R.  $\star$  Number theory in science and communication. 85j:11003

## 11Y05 Factorization

- Adleman, Leonard M. (with McDonnell, Robert) An application of higher reciprocity to computational number theory. (See 85k:68007)  
 Buell, Duncan A. The expectation of success using a Monte Carlo factoring method—some statistics on quadratic class numbers. 85k:11068  
 Davenport, J. H. See Macmillan, R. J., 85g:11115  
 Gerver, Joseph L. Factoring large numbers with a quadratic sieve. 85c:11122  
 Keller, Wilfrid Factors of Fermat numbers and large primes of the form  $k \cdot 2^n + 1$ . 85b:11117  
 Lenstra, H. W., Jr. Divisors in residue classes. 85b:11118  
 See also Schnorr, Claus P., 85d:11106  
 Macmillan, R. J. (with Davenport, J. H.) Factoring medium-sized integers. 85g:11115  
 McDonnell, Robert See Adleman, Leonard M., (85k:68007)  
 Naur, Thoralf New integer factorizations. 85c:11123  
 Pomerance, Carl (with Wagstaff, Samuel S., Jr.) Implementation of the continued fraction integer factoring algorithm. 85c:11124  
 te Riele, H. J. J. New very large amicable pairs. (See 85i:11001)  
 Schnorr, Claus P. (with Lenstra, H. W., Jr.) A Monte Carlo factoring algorithm with linear storage. 85d:11106  
 Voorhoeve, M. Factorization algorithms of exponential order. 85g:11116  
 Wagstaff, Samuel S., Jr. See Pomerance, Carl, 85c:11124  
 Williams, Hugh Cowie Factoring on a computer. 85h:11079

### secondary classifications (11Y05)

- Bose, N. K. See Guiver, John P., 85j:12005  
 von zur Gathen, Joachim (with Kaltofen, Erich) Polynomial-time factorization of multivariate polynomials over finite fields. 85d:11104  
 Guiver, John P. (with Bose, N. K.) Polynomial matrix primitive factorization over arbitrary coefficient field and related results. 85j:12005  
 Ibarra, Oscar H. (with Moran, Shlomo; Rosier, Louis E.) On the control power of integer division. 85c:68063  
 Kaltofen, Erich A polynomial-time reduction from bivariate to univariate integral polynomial factorization. (See 85k:68007)  
 (with Musser, David R.; Saunders, B. David) A generalized class of polynomials that are hard to factor. 85a:12001  
 See also von zur Gathen, Joachim, 85d:11104  
 Lenstra, H. W., Jr. Introduction. 85a:11007  
 Moran, Shlomo See Ibarra, Oscar H.; et al., 85c:68063  
 Musser, David R. See Kaltofen, Erich; et al., 85a:12001  
 Plaisted, David A. New NP-hard and NP-complete polynomial and integer divisibility problems. 85j:68043  
 Rosier, Louis E. See Ibarra, Oscar H.; et al., 85c:68063  
 Saunders, B. David See Kaltofen, Erich; et al., 85a:12001

## 11Y11 Primality

Borho, Walter Große Primzahlen und befreundete Zahlen: Über den Lucas-Test und Thabit-Regeln. (English summary) [Large primes and amicable numbers: on the Lucas test and Thabit rules] 85f:11094

(Buhl, J.) See Borho, Walter, 85f:11094

(Buhler, J. P.) See Keller, Wilfrid, 85b:11119

(Crandall, R. E.) See Keller, Wilfrid, 85b:11119

(Hoffmann, H.) See Borho, Walter, 85f:11094

Keller, Wilfrid Corrigendum: "Primes of the form  $n! \pm 1$  and  $2 \cdot 3 \cdot 5 \cdots p \pm 1$ " [Math. Comp. 38 (1982), no. 158, 639-643; MR 83c:10006] by J. P. Buhler, R. E. Crandall and M. A. Penk. 85b:11119

Lenstra, H. W., Jr. Primality testing. 85g:11117

Fast prime numbers tests. 85b:11120

(Mertens, S.) See Borho, Walter, 85f:11094

(Nebgen, E.) See Borho, Walter, 85f:11094

(Penk, M. A.) See Keller, Wilfrid, 85b:11119

Pomerance, Carl References on primality testing. 85b:11121

Pritchard, Paul A. Fast compact prime number sieves (among others). 85b:11080

(Reckow, R.) See Borho, Walter, 85f:11094

te Riele, H. J. J. On generating new amicable pairs from given amicable pairs. 85d:11107

Rumely, Robert S. Recent advances in primality testing. 85b:11122

secondary classifications (11Y11)

Keller, Wilfrid Factors of Fermat numbers and large primes of the form  $k \cdot 2^n + 1$ . 85b:11117

Schroeder, M. R. Where is the next Mersenne prime hiding? 85c:11010

Weintraub, Sol Erratum: "A prime gap of 682 and a prime arithmetic sequence" [BIT 22 (1982), no. 4, 538; MR 84b:10014]. 85a:11027

## 11Y16 Algorithms; complexity

Klostermair, Albert (with Lüneburg, Heinz) Ein Algorithmus zur Berechnung der größten Ganzen aus Wurzel  $d$ . [An algorithm for computing the greatest integer part of the square root of  $d$ ] 85f:11095

Lagarias, J. C. The computational complexity of simultaneous Diophantine approximation problems. (See 85k:68007)

(with Odlyzko, A. M.) New algorithms for computing  $\pi(x)$ . 85j:11182

Loos, Rüdiger Computing rational zeros of integral polynomials by  $p$ -adic expansion. 85b:11123

Lüneburg, Heinz See Klostermair, Albert, 85f:11095

Odlyzko, A. M. See Lagarias, J. C., 85j:11182

Purdy, G. B. A carry-free algorithm for finding the greatest common divisor of two integers. 85a:11026

secondary classifications (11Y16)

Coppersmith, Don Fast evaluation of logarithms in fields of characteristic two. 85h:85041

Krishnamurthy, E. V. On the conversion of Hensel codes to Farey rationals. 85a:11003 (with Murthy, V. K.) Fast iterative division of  $p$ -adic numbers. 85a:11004

Mignotte, Maurice Estimations élémentaires effectives sur les nombres algébriques. [Effective elementary estimates on algebraic numbers] 85h:11039

Murthy, V. K. See Krishnamurthy, E. V., 85a:11004

te Riele, H. J. J. Iteration of number-theoretic functions. 85e:11003

Zhang, Guo Qiang "NP = P?" and restricted partitions. 85f:68034

## 11Y35 Analytic computations

Newman, Morris (with Shanks, Daniel) On a sequence arising in series for  $\pi$ . 85k:11069

Shanks, Daniel See Newman, Morris, 85k:11069

secondary classifications (11Y35)

Lagarias, J. C. (with Odlyzko, A. M.) New algorithms for computing  $\pi(x)$ . 85j:11182

van de Lune, J. (with te Riele, H. J. J.) On the zeros of the Riemann zeta function in the critical strip. III. 85e:11062

Matiyasevich, Yu. V. Yet another machine experiment in support of Riemann's conjecture. 85g:11079

McCurley, Kevin S. Explicit estimates for the error term in the prime number theorem for arithmetic progressions. 85e:11065

Odlyzko, A. M. See Lagarias, J. C., 85j:11182

te Riele, H. J. J. See van de Lune, J., 85e:11062

Romani, F. Computations concerning Waring's problem for cubes. 85g:11088

## 11Y40 Algebraic number theory computations

Schoof, R. J. Quadratic fields and factorization. 85g:11118b

Zantema, H. Class numbers and units. 85g:11118a

secondary classifications (11Y40)

Baica, Malvina An algorithm in a complex field and its application to the calculation of units. 85g:11096

Buell, Duncan A. The expectation of success using a Monte Carlo factoring method—some statistics on quadratic class numbers. 85k:11068

Hao, Fred H. (with Parry, Charles J.) Generalized Bernoulli numbers and  $m$ -regular primes. 85h:11062

Lazard, Daniel On the minimal algorithm in rings of imaginary quadratic integers. 85b:11080

van der Linden, F. J. The computation of Galois groups. 85f:11078

Parry, Charles J. See Hao, Fred H., 85h:11062

## 11Y55 Calculation of integer sequences

Boberntz, Michael (with Fraenkel, Aviezri S.) A linear algorithm for nonhomogeneous spectra of numbers. 85j:11183

Er, M. C. Computing sums of order- $k$  Fibonacci numbers in log time. 85b:11124

Fraenkel, Aviezri S. See Boberntz, Michael, 85j:11183

Martin, Alain J. (with Rem, M.) A presentation of the Fibonacci algorithm. 85m:11093

Pritchard, Paul A. Eighteen primes in arithmetic progression. 85c:11125

A case study of number-theoretic computation: searching for primes in arithmetic progression. 85g:11119

Rem, M. See Martin, Alain J., 85m:11093

Weintraub, Sol Erratum: "A prime gap of 682 and a prime arithmetic sequence" [BIT 22 (1982), no. 4, 538; MR 84b:10014]. 85a:11027

secondary classifications (11Y55)

te Riele, H. J. J. New very large amicable pairs. (See 85b:11001)

## 11Y65 Continued fraction calculations

Brentjes, A. J. Multidimensional continued fraction algorithms. 85f:11096

secondary classifications (11Y65)

Dueck, Gunter See Williams, Hugh Cowie, 85j:11077

Williams, Hugh Cowie (with Dueck, Gunter) An analogue of the nearest integer continued fraction for certain cubic irrationalities. 85j:11077

## 11Y99 None of the above, but in this section

Campbell, Douglas M. The computation of Catalan numbers. (Not in MR)

## 12-XX FIELD THEORY AND POLYNOMIALS

## 12-01 Elementary exposition; textbooks

Bastida, Julio R. ★ Field extensions and Galois theory. 85j:12001

Kurosh, A. G. ★ Алгебраические уравнения произвольных степеней. (Russian) [Algebraic equations of arbitrary powers] 85h:12001

(Lyndon, R. C.) See Bastida, Julio R., 85j:12001

secondary classifications (12-01)

Allenby, R. B. J. T. ★ Rings, fields and groups. 85a:00001

Kurosh, A. G. ★ Ecuaciones algebraicas de grados arbitrarios. (Spanish) [Algebraic equations of arbitrary degrees] 85a:00003

(de Sepulveda, Silvia) See Kurosh, A. G., 85a:00003

## 12-02 Advanced exposition (research surveys, monographs, etc.)

Faddeev, D. K. Galois theory (in the Mathematics Institute of the Academy of Sciences). (Russian) 85j:12002

Salem, Raphael Algebraic numbers and Fourier analysis. (See 85i:00004)

secondary classifications (12-02)

Wiśniewski, Witold Topological fields. 85f:12012

## 12-03 Historical (must also be assigned at least one classification number from Section 01)

Pommaret, J.-F. The genesis of the Galois theory for systems of partial differential equations. 85b:12001

secondary classifications (12-03)

(Benedetto of Florence) See Franci, Raffaella, 85a:01023

Benis-Sinaceur, Hourya De D. Hilbert à E. Artin: les différents aspects du dix-septième problème et les filiations conceptuelles de la théorie des corps réels clos. [From D. Hilbert to E. Artin: the various aspects of the 17th problem and its conceptual links with the theory of real closed fields] 85k:01033

Borevich, Z. I. (with Yakovlev, A. V.) Field theory. (Russian) (See 85g:01004)

Franci, Raffaella (with Toti Rigatelli, Laura) Maestro Benedetto of Florence and the history of algebra. (Italian. English, French and German summaries) 85a:01023

Toti Rigatelli, Laura See Franci, Raffaella, 85a:01023

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Dieter, Gerhard Witttringe singulärer reeller Kurven. I, II. [Witt rings of singular real curves. I, II] 85e:14032

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- Adams, William W. Splitting of quartic polynomials. 85f:12005  
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- Greenfield, Gary R. Uniform distribution in subgroups of the Brauer group of an algebraic number field. 85a:12006  
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- Bak, Anthony (with Rehmann, Ulf) The congruence subgroup and metaplectic problems for  $SL_n \geq 2$  of division algebras. 85j:11041  
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- Brockett, R. W. Linear feedback systems and the groups of Galois and Lie. 85e:93017  
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- Lim, M. H. A remark on finite extensions of fields. 85f:12007  
 Lüneburg, Helms Effektive Konstruktion der algebraischen Erweiterungen von  $\text{GF}(p)$  sowie der vollständigen Kreisteilungskörper. [Effective construction of algebraic extensions of  $\text{GF}(p)$  and of the complete cyclotomic fields] 85b:12003  
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- Elman, Richard (with Lam, Tait Yuen; Tignol, Jean-Pierre; Wadsworth, Adrian R.) Witt rings and Brauer groups under multiquadratic extensions. I. 85i:11032  
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- Brinkhuis, Jan  $K_2$  and Galois extensions of fields. 85j:12006  
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- Balaba, I. N. Dimensional polynomials of extension of difference fields. (Russian) 85g:12004  
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- Kikuchi, Teppel Some topological properties of the derivation algebra  $\mathcal{D}(K/k)$  for a field extension  $K/k$ . 85b:12008  
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- Cutillas Ripoll, Pascual Certain function fields associated to a compact Riemann surface. (Spanish. English summary) (See 85i:90012)  
 Deveney, James K. Automorphism groups of ruled function fields and a problem of Zariski. 85f:12010  
 Formanek, E. Rational function fields. Noether's problem and related questions. 85b:12009  
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- Beauville, Arnaud Variétés rationnelles et unirationnelles. [Rational and unirational varieties] 85e:14075

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Evanovich, Peter Finitely generated extensions of partial difference fields. 85b:12012

Hajja, Mowaffaq Corrigendum: "On the rationality of monomial automorphisms" [J. Algebra 73 (1981), no. 1, 30-36; MR 83c:12020]. 85j:11135

Madan, Manohar L. See D'Mello, Joseph G., 85f:14025

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Opolka, Hans Der Schur-Multiplikator in der algebraischen Zahlentheorie. [The Schur multiplier in algebraic number theory] 85b:12011

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Chase, Stephen U. Two remarks on central simple algebras. 85f:16019

Gérard, Yves Caractérisation des groupes de cohomologie d'un groupe topologique en termes de suites exactes. [Characterization of cohomology groups of a topological group in terms of exact sequences] 85g:23007

Halle, Darrell E. The Brauer monoid of a field. 85e:16009

Jannsen, Uwe (with Wingberg, Kay) Demushkin-Erzeugende einer elementar-abelschen  $p$ -Erweiterung. [Demushkin generators of an elementary abelian  $p$ -extension] 85f:11088

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Ford, Timothy J. Hecke actions on Brauer groups. 85j:13005

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## 12Hxx Differential and difference algebra

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Beklemisheva, L. Some algebraic questions in the theory of ordinary differential equations. (Russian) 85b:12005

Davenport, J. H. Intégration algorithmique des fonctions élémentairement transcendentes sur une courbe algébrique. [Algorithmic integration of elementarily transcendental functions on an algebraic curve] 85i:12009

Eremenko, A. E. Meromorphic solutions of first-order algebraic differential equations. (Russian) 85m:12002

Johnson, Joseph Order for systems of differential equations and a generalization of the notion of differential ring. 85i:12010

Nehrkorn, Klaus Ein Entscheidungsverfahren zur unbestimmten Integration einer Klasse elementar-transzendenten Funktionen als Modifikation eines Verfahrens von Risch. [A decision procedure for symbolic integration of a class of elementary-transcendental functions as modification of a procedure of Risch] 85g:12003

Nishioka, Keiji A note on differentially algebraic solutions of first order linear difference equations. 85m:12003

Perko, R. Bemerkungen zur Differentialgleichungstheorie in algebraischen Funktionenkörpern positiver Charakteristik. [Remarks on the theory of differential equations in algebraic function fields of positive characteristic] 85f:12011

Pommaret, J.-F. ★ Differential Galois theory. 85m:12004

Prelle, M. J. (with Singer, Michael F.) Elementary first integrals of differential equations. 85d:12008

Rubel, Lee A. Solutions of algebraic differential equations. 85d:12009

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Cherednik, I. V. On the properties of factorized  $S$  matrices in elliptic functions. 85d:14018

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Dikii, L. A. Symplectic structures, Lagrangian, and involutiveness of first integrals of the principal chiral field equation. 85e:58063

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Adolphson, Alan (with Sperber, Steven) Twisted Kloosterman sums and  $p$ -adic Bessel functions. 85k:12002

Amice, Y. Dilogarithme  $p$ -adique, d'après R. Coleman. [ $p$ -adic dilogarithm, after R. Coleman] 85j:12011

Baldassarri, F. Witt vectors,  $p$ -adic differential equations and descent theory. (See 85g:14004)

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Basarab, Șerban A. A Nullstellensatz over ordered fields. 85i:12014

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Brown, Ron (with Craven, Thomas C.; Pelling, M. J.) Ordered fields satisfying Rolle's theorem. (See 85i:12002)

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## 12J25 Non-Archimedean valued fields [See also 26E30, 30G05, 32D25, 46P05.]

Matignon, Michel (with Reversat, Marc) Sur les automorphismes continus d'extensions transcendentes valuées. [On the continuous automorphisms of valued transcendental extensions] 85f:12013

(with Reversat, Marc) Sous-corps fermés d'un corps valué. [Closed subfields of valued fields] 85k:12007

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Sarmant-Durix, Marie-Claude Propriétés algébriques des produits infinis. [Algebraic properties of infinite products] 85i:12015

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## 12J99 None of the above, but in this section

Abouabdillah, Dries Topologies de corps  $A$  linéaires. [A-linear field topologies] 85e:12006

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Shakhmatov, D. B. Cardinal invariants of topological fields. (Russian) 85e:54004

## 12Kxx Generalizations

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Gröger, Detlef Bemerkungen zur Galois-theorie in Fastkörpern. [Remarks on Galois theory in near fields] 85e:12011

Embedding of near-fields with real valuations into planar near-fields. 85j:12013

Klucky, Dalibor (with Marková, Libuše) On valuations of nearfields. (Russian and Czech summaries) 85e:12012

Kreft, Walter Fastkörper mit multiplikativer FC-Gruppe. [Nearfields with multiplicative FC-group] 85e:12009

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## 12Lxx Connections with logic

## 12L05 Decidability

Macintyre, A. Decision problems for exponential rings: the  $p$ -adic case. 85f:12014

secondary classifications (12L05)

van den Dries, L. Exponential rings, exponential polynomials and exponential functions. 85j:13040

Ershov, Yu. L. Two theorems on regularly  $r$ -closed fields. 85i:12006

Haran, Dan The undecidability of pseudo-real-closed fields. 85j:03072

Heints, Joos Definability and fast quantifier elimination in algebraically closed fields. 85a:68062

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Dahn, Bernd I. (with Wolter, Helmut) On the theory of exponential fields. 85a:12010

van den Dries, L. (with Schmidt, Karsten) Bounds in the theory of polynomial rings over fields. A nonstandard approach. 85i:12016

Schmidt, Karsten See van den Dries, L., 85i:12016

Wolter, Helmut See Dahn, Bernd I., 85i:12010

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Duret, Jean-Louis Stabilité des corps séparablement clos (d'après Carol Wood). [Stability of separably closed fields (after Carol Wood)] 85f:03032

Gramain, François Non-minimalité de la clôture différentielle. I. La preuve de S. Shelah. [Nonminimality of the differential closure. I. The proof of S. Shelah] 85h:03033a

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Wheeler, William H. Model complete theories of formally real fields and formally  $p$ -adic fields. 85b:03055Yasumoto, Masahiro Nonstandard arithmetic of function fields over  $H$ -convex subfields of  ${}^*Q$ . 85g:11028Nonstandard arithmetic of function fields over  $H$ -convex subfields of  ${}^*Q$ . 85g:11028

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Jarden, Moshe (with Wheeler, William H.) Model-complete theories of  $e$ -free  $Ax$  fields. 85f:03034

Poizat, Bruno Une théorie de Galois imaginaire. [An imaginary Galois theory] 85e:03063

Ruitenburg, Wim Primality and invertibility of polynomials. 85e:03150

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## 13-XX COMMUTATIVE RINGS AND ALGEBRAS (For the noncommutative case, see 16-XX.)

## 13-01 Elementary exposition; textbooks

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Attenby, R. B. J. T. ★ Rings, fields and groups. 85a:00001

(Bittner, Ryssard) *See* Lang, Serge, 85h:00001  
 Lang, Serge *★* Algebra. (Polish) 85h:00001  
 Shornikov, L. A. *★* Элементы общей алгебры. (Russian) [Elements of general algebra] 85h:00002

### 13-02 Advanced exposition (research surveys, monographs, etc.)

Andrade, José Fernandes (with Simis, A.) *★* Tópicos de álgebra comutativa. (Portuguese) [Topics in commutative algebra] 85m:13001  
 Simis, A. *See* Andrade, José Fernandes, 85m:13001  
 Verschoren, A. Relative invariants for commutative rings. 85i:13001

#### secondary classifications (13-02)

Gilmer, Robert *★* Commutative semigroup rings. 85e:20053  
 Kung, Joseph P. S. (with Rota, Gian-Carlo) The invariant theory of binary forms. 85g:05002  
 Ratliff, L. J., Jr. A brief survey and history of asymptotic prime divisors. 85i:13018  
 Rota, Gian-Carlo *See* Kung, Joseph P. S., 85g:05002  
 Stanley, Richard P. *★* Combinatorics and commutative algebra. 85b:05002

### 13-04 Explicit machine computation and programs (not the theory of computation or programming)

#### secondary classifications (13-04)

De Concini, Corrado (with Eisenbud, D.; Procesi, Claudio) *★* Hodge algebras. 85d:13009  
 Eisenbud, D. *See* De Concini, Corrado; et al., 85d:13009  
 Kaltofen, Erich Effective Hilbert irreducibility. (See 85k:00009)  
 Procesi, Claudio *See* De Concini, Corrado; et al., 85d:13009  
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### 13-06 Proceedings, conferences, etc.

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(Geramita, A. V.) *See* Seminar: Queen's, curves, 85m:14003a and 85m:14003b  
 (Lemaire, Jean-Michel) *See* Algebraic homotopy and local algebra, 85d:55001  
 (Manocha, H. L.) *See* Algebra and its applications, 85g:00023  
 (Srivastava, Jaya) *See* Algebra and its applications, 85g:00023  
 (Thomas, Jean-Claude) *See* Algebraic homotopy and local algebra, 85d:55001  
 Algebra and its applications *★* Algebra and its applications. 85g:00023  
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 Kingston, Ont. *★* The curves seminar at Queen's. Vol. II. 85m:14003a  
 Luminy *★* Homotopie algébrique et algèbre locale. (French) [Algebraic homotopy and local algebra] 85d:55001

New Delhi *★* Algebra and its applications. 85g:00023

#### Seminar:

Queen's, curves *★* The curves seminar at Queen's. Vol. II. 85m:14003a

#### Symposium:

Algebra and its applications *★* Algebra and its applications. 85g:00023

### 13Axx General commutative ring theory

#### 13A05 Divisibility

Močkar, Jiri *★* Groups of divisibility. 85j:13001

#### secondary classifications (13A05)

Matsuda, Ryūki On an Anderson-Anderson problem. 85e:13002

#### 13A10 Radical theory

Wu, Pin San The decomposition of a commutative ring with a finite number of zero divisors. (Chinese. English summary) 85a:13001

#### secondary classifications (13A10)

Marocchia, P. Some results on G-domains. (Italian summary) 85k:13021  
 Munn, W. D. On the Jacobson radical of certain commutative semigroup algebras. 85g:20002  
 Zhou, Shang Chao On a problem concerning nil rings. (Chinese. English summary) 85d:16005

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 Gheorghiu, O. Em. (with Izverceanu, P. N.) On a class of commutative algebras. 85h:13001  
 Heinser, William (with Lantz, David) Universally contracted ideals in commutative rings. 85h:13002  
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 de Souza Doering, Ada Maria (with Lequain, Yves) Chain of prime ideals in formal power series rings. 85e:13001

#### secondary classifications (13A15)

Costa, Douglas L. On the torsion-freeness of the symmetric powers of an ideal. 85e:13019  
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 Powers of ideals in locally unmixed Noetherian rings. 85e:13010  
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 Traidl, Lorenzo The determinantal ideals of link modules. II. 85k:57008  
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 Contessa, M. On certain classes of pm-rings. 85m:13003  
 Iros, Juana (with Rush, David E.) Associated prime ideals in non-Noetherian rings. 85j:13002  
 Katsuki, Teruo (with Kitamura, Kazuo) Notes on infinite primes of a commutative ring. 85d:13002  
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 Okon, J. S. Prime divisors and integral extensions. 85e:13005  
 Prime divisors, analytic spread and filtrations. 85e:13006  
 Perić, V. Eine Charakterisierung der Menge  $\text{Ass}(\mathfrak{A})$  in kommutativen Noetherschen Ringen. (English summary) [A characterization of the set  $\text{Ass}(\mathfrak{A})$  in Noetherian commutative rings] 85i:13005  
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#### secondary classifications (13A17)

Carral, Michel (with Coste, Michel) Normal spectral spaces and their dimensions. 85e:14002  
 Coste, Michel *See* Carral, Michel, 85e:14002  
 Dobbs, David E. (with Fontana, Marco) Universally incomparable ring-homomorphisms. 85e:13007  
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- Patil, D. P. (with Singh, Balwant) Remarks on maximally differential prime ideals. 85b:13042
- Prodanov, Ivan An abstract approach to the algebraic notion of a spectrum. (Russian) 85d:08002
- Singh, Balwant See Patil, D. P., 85b:13042
- Sita Rama Murty, A. Noetherian  $S$ -spaces and primary decompositions. 85i:20071
- Tamone, Grazia A connection between blowing-up and gluings in one-dimensional rings. 85k:13024
- Yanagihara, Hiroshi Some results on weakly normal ring extensions. 85e:13010

### 13A18 Valuations and their generalizations

- Alajbegović, Jusuf Approximation theorems for Manis valuations with the inverse property. 85k:13002
- Faith, Carl The structure of valuation rings. 85k:13003
- Manley, P. L. Quasivaluation of rings with core elements. 85b:13001
- Matsuda, Ryūki On Marot rings. 85j:13003
- Mináč, Ján The distributivity property of finite intersections of valuation rings. (Russian summary) 85j:13004
- Nakamura, Yoshio On maximal ideals of valuation rings. 85b:13002
- Ohm, Jack (with Vicknair, Paul) Monoid rings which are valuation rings. 85b:13003
- Rhodes, C. P. L. Valuation subalgebras and analogues of the decomposition of a radical ideal into prime ideals. 85b:13004
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- Alonso, M. E. Real proper morphisms. 85m:14038
- Chen, Bing Hui (with Qi, Zhi Nan) On Henselian valuation rings. (Chinese) (Not in MR)
- Fontana, Marco Sur quelques classes d'anneaux divisibles. (English and Italian summaries) [On some classes of divided rings] 85b:13013
- Franssen, Berthold On the separability of a direct product of free modules over a valuation domain. 85j:13013
- Gräber, Joachim Integral closure and valuation rings with zero-divisors. 85b:13005
- [R-Prüfering und Bewertungsfamilien. [R-Prüfer rings and valuation families] 85k:13017
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- Qi, Zhi Nan See Chen, Bing Hui, (Not in MR)

### 13A20 Brauer groups [See also 12Gxx, 16A16.]

- Casal, Paulina Relations between Brauer groups of commutative rings and certain quotient rings. (Spanish. English summary) 85b:13005
- Ford, Timothy J. Hecke actions on Brauer groups. 85j:13005
- Verschoren, A. Brauer groups and class groups for Krull domains: a  $K$ -theoretic approach. 85j:13006
- Vraciu, Constantin (with Vraciu, Mariana) Le groupe de Brauer d'un anneau commutatif absolument plat. (English summary) [The Brauer group of an absolutely flat commutative ring] 85b:13003
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- Mammonne, Pascal Remarques sur les produits croisés différentiels. [Remarks on differential crossed products] 85f:12009
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- Takeuchi, Mitsuhiro The mapping cone method and the Hattori-Villamayor-Zelinsky sequences. 85e:18008
- Tignol, Jean-Pierre Cyclic algebras of small exponent. 85m:11082
- Ulbrich, Karl-Heinz Sur l'injection de  $\text{Ext}(S, G_m^A)$  dans  $\widehat{\text{Br}}(A/k)$ . (English summary) [On the injection of  $\text{Ext}(S, G_m^A)$  into  $\widehat{\text{Br}}(A/k)$ ] 85k:14011
- Sur l'injection de  $\text{Ext}(S, G_m^A)$  dans  $\widehat{\text{Br}}(A/k)$ . (English summary) [On the injection of  $\text{Ext}(S, G_m^A)$  into  $\widehat{\text{Br}}(A/k)$ ] 85m:14064
- Van Oystaeyen, F. (with Verschoren, A.) Splitting and crossed products in relative Brauer groups. 85i:16029
- Verschoren, A. Relative invariants for commutative rings. 85i:13001
- See also Van Oystaeyen, F., 85i:16029

### 13A99 None of the above, but in this section

- Bröcker, Ludwig Positivbereiche in kommutativen Ringen. [Positivity domains in commutative rings] 85c:13004
- Dobbs, David E. (with Fontana, Marco; Papick, Ira J.) Direct limits and going-down. 85b:13006
- Fontana, Marco See Dobbs, David E.; et al., 85b:13006
- Papick, Ira J. See Dobbs, David E.; et al., 85b:13006
- Perić, V. Eine Charakterisierung der 0-dimensionalen Ringe. (English and Serbo-Croatian summaries) [A characterization of 0-dimensional rings] 85i:13006a
- Correction to the paper: "A characterization of 0-dimensional rings". (German) 85e:13006b

#### secondary classifications (13A99)

- Dutta, T. K. On generalised semi-ideals of rings. 85e:16054

- Feigelson, Shalom A note on subdirectly irreducible rings. 85b:20064
- Morris, I. (with Wensley, C. B.) Adams operations and  $\lambda$ -operations in  $\beta$ -rings. 85k:20044
- Wensley, C. B. See Morris, I., 85k:20044

### 13Bxx Ring extensions and related topics

#### 13B02 Extension theory

- Angermüller, Gerhard Root closure. 85m:13004
- Dobbs, David E. (with Fontana, Marco) Universally incomparable ring-homomorphisms. 85e:13007
- Fontana, Marco See Dobbs, David E., 85e:13007
- Giral Sibá, José M. Krull dimension and algebraic extensions. (Spanish. English summary) (See 85g:00026)
- Heinzer, William (with Lantz, David)  $N$ -rings and ACC on colon ideals. 85i:13007
- Kersten, Ina ★ Eine neue Kummertheorie für zyklische Galoisweiterungen vom Grad  $p^2$ . (German) [A new Kummer theory for cyclic Galois extensions of degree  $p^2$ ] 85b:13007
- Lantz, David See Heinzer, William, 85i:13007
- Popescu, Elena-Liliana The Bourbaki-Jacobson theorem for commutative regular rings. (Romanian. English summary) 85m:13005
- Revoş, Philippe Discriminant d'une extension séparable d'anneaux. (English summary) [Discriminant of a separable extension of rings] 85j:13007
- Saltman, David J. Noether's problem over an algebraically closed field. 85m:13006
- Uda, Hirohumi LCM-stableness in ring extensions. 85b:13008

#### secondary classifications (13B02)

- Barucci, Valentina On a class of Mori domains. 85a:13013
- Glas, Sarah (with Vasconcelos, W. V.) Flat ideals. III. 85m:13010
- Hochster, M. (with McLaughlin, J. E.) Splitting theorems for quadratic ring extensions. 85c:13015
- Langmann, Klaus Treuflacher Limes noetherscher Ringe. [Faithfully flat limit of Noetherian rings] 85f:13017
- McLaughlin, J. E. See Hochster, M., 85c:13015
- Vasconcelos, W. V. See Glas, Sarah, 85m:13010
- Wang, Shi Qiang A class of commutative rings with the Goldbach property. (Chinese. English summary) 85c:11084
- (with Wu, Tao) Extensions, without the Goldbach property of quadratic rings of algebraic integers. (Chinese. English summary) 85g:11089
- Wu, Tao See Wang, Shi Qiang, 85g:11089
- Yoshida, Ken-ichi On birational-integral extension of rings and prime ideals of depth one. 85g:13001

#### 13B05 Galois theory

- Dzhanelidze, G. Z. Abelian extensions of commutative rings. (Russian. English and Georgian summaries) 85e:13008
- Kersten, Ina (with Michalíček, Johannes) Eine Charakterisierung der reellen Abschlässe von semilokalen Ringen. [A characterization of the real closures of semilocal rings] 85b:13003
- Kishimoto, Kazuo On  $p$ -extensions of an algebra of characteristic  $p$ . 85d:13004
- Michalíček, Johannes See Kersten, Ina, 85d:13003
- Saltman, David J. Retract rational fields and cyclic Galois extensions. 85j:13008

#### secondary classifications (13B05)

- Childs, Lindsay N. Cyclic Stickelberger cohomology and descent of Kummer extensions. 85c:12003
- DeMeyer, Frank R. Generic polynomials. 85a:12007
- Kersten, Ina ★ Eine neue Kummertheorie für zyklische Galoisweiterungen vom Grad  $p^2$ . (German) [A new Kummer theory for cyclic Galois extensions of degree  $p^2$ ] 85b:13007
- Popescu, Elena-Liliana The Bourbaki-Jacobson theorem for commutative regular rings. (Romanian. English summary) 85m:13005
- Popescu, Emil Generalizations of some operators in the theory of Galois connections. (Romanian. French summary) 85f:68048
- Takeuchi, Mitsuhiro The mapping cone method and the Hattori-Villamayor-Zelinsky sequences. 85e:18008
- Ulbrich, Karl-Heinz Sur l'injection de  $\text{Ext}(S, G_m^A)$  dans  $\widehat{\text{Br}}(A/k)$ . (English summary) [On the injection of  $\text{Ext}(S, G_m^A)$  into  $\widehat{\text{Br}}(A/k)$ ] 85k:14011

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- Anick, David J. Limits of tame automorphisms of  $k[x_1, \dots, x_N]$ . 85d:13005
- Bas, Hyman Automorphisms of polynomial rings. 85b:13009
- Carli, Vito Integrable derivations in rings of analytic type over a DVR. (Italian) 85k:13004
- Dowlen, Mary The fixed subring of some groups of ring automorphisms. 85a:13002
- On the  $R$ -automorphisms of  $R[X]$ . 85k:13005
- Furuya, Mamoru An extension of higher derivations and its application. 85a:13003
- Kostyko, Pavel An application of Cramer's rule on a class of linear maps. (Russian and Slovak summaries) 85c:13005
- Li Marzi, Enso Maria On the rank of the module of derivations in positive characteristic. (Italian. English summary) 85b:13004
- Matsumura, Hideyuki See Restuccia, Gaetana, 85d:13006
- Patil, D. P. (with Singh, Balwant) A differential condition on the normal cone. 85f:13006
- Restuccia, Gaetana Jacobian criteria of regularity in terms of differentials for rings with positive characteristic. (Italian. English summary) 85k:13006
- (with Matsumura, Hideyuki) Integrable derivations in rings of unequal characteristic. 85d:13006



- Scheja, Günter (with Wiebe, Hartmut) Derivationen in zweidimensionalen normalen Singularitäten. [Derivations in two-dimensional normal singularities] 85m:13007  
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 Vialiti, V. N. Continuous extension of differentiations of rings. (Russian) 85i:13006  
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## secondary classifications (13B10)

- Bas, Hyman A nontriangular action of  $G_n$  on  $A^3$ . 85j:14086  
 Brown, William C. A note on higher derivations and ordinary points of curves. 85i:13007  
 Chung, I. Y. Derivation modules of group rings and integers of cyclotomic fields. 85b:13015  
 Druzkowski, Ludwik M. An effective approach to Keller's Jacobian conjecture. 85b:14015a  
 Kimura, Tetsuo (with Nitsuma, Hiroshi) Differential basis and  $p$ -basis of a regular local ring. 85m:13018  
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 Oka, Mutsuo On the boundary obstructions to the Jacobian problem. 85m:14023  
 Pheki, Arkadiusz Sur les dérivations des anneaux des séries convergentes. [On derivations in rings of convergent series] 85j:13037  
 Rusek, Kamil A geometric approach to Keller's Jacobian conjecture. 85b:14015b  
 Singh, Balwant Maximally differential prime ideals in a complete local ring. 85f:13004  
 Permissibility of a maximally differential prime ideal. 85f:13005

## 13B15 Ramification theory

- Brown, Martin Lawrence A note on tamely ramified extensions of rings. 85b:13010  
 Brown, William C. A note on higher derivations and ordinary points of curves. 85i:13007

## 13B20 Integral dependence; integral closure; integrally closed rings, related rings (Japanese, etc.)

- André, Michel Quasi-excellence and formal series. 85j:13009  
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 Dobbs, David E. (with Fontana, Marco) Universally going-down integral domains. 85i:13009  
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 Katz, Daniel On the integrity of ideal transforms. 85j:13010  
 Kostra, Juraj The covering of rings by integrally closed rings. (Russian summary) 85i:13016  
 Onoda, Nobuharu (with Yoshida, Ken-ichi) Remarks on quasinormal rings. 85k:13008  
 Rosales, Alvis ★ Anillos seminormales. (Spanish) [Seminormal rings] 85h:13006  
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 See also Sugatani, Takasi, 85e:13009 and Onoda, Nobuharu, 85k:13008

## secondary classifications (13B20)

- Alonso, M. E. Real proper morphisms. 85m:14038  
 Anderson, D. D. (with Anderson, David F.; Dobbs, David E.; Houston, Evan G.) Some finiteness and divisibility conditions on the proper overrings of an integral domain. 85m:13014  
 Anderson, David F. See Anderson, D. D.; et al., 85m:13014  
 Angermüller, Gerhard Root closure. 85m:13004  
 Barucci, Valentina (with Dobbs, David E.) On chain conditions in integral domains. 85h:13016  
 Dobbs, David E. (with Fedder, Richard) Conductive integral domains. 85b:13026  
 See also Barucci, Valentina, 85h:13016 and Anderson, D. D.; et al., 85m:13014  
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 Hamann, Eloise A postscript on steadfast rings and  $R$ -algebras in one variable. 85g:13002  
 Houston, Evan G. See Anderson, D. D.; et al., 85m:13014  
 Lüneburg, Heins Effektive Konstruktion der algebraischen Erweiterungen von  $GF(p)$  sowie der vollständigen Kreisteilungskörper. [Effective construction of algebraic extensions of  $GF(p)$  and of the complete cyclotomic fields] 85h:12003  
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 Matsumoto, Ryōki On the content condition of a graded integral domain. 85i:13003  
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 Piette, Erich Jacobi-Algebra und Blätterzahl von analytisch-verzweigten Überlagerungen isolierter Hyperflächensingularitäten. [Jacobi algebra and number of sheets of analytically branched coverings of isolated hypersurface singularities] 85d:32016  
 Ratliff, L. J., Jr. Asymptotic sequences and factor rings. 85b:13017  
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 Ştefănescu, Doru Invariance properties of polynomial rings. (Romanian. English summary) 85d:13007  
 Verschoren, A. On the seminormalization of noncommutative affine curves. 85d:14045  
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- Vitall, Marie A. On grade and formal connectivity for weakly normal varieties. 85f:14009  
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## 13B25 Polynomials over commutative rings

- Bas, Hyman The Jacobian conjecture. 85j:13011  
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 Oda, Susumu (with Yoshida, Ken-ichi) A short proof of the Jacobian conjecture in case of degree  $\leq 2$ . 85b:13011  
 Sasaki, Tateaki (with Furukawa, Akio) Theory of multiple polynomial remainder sequence. 85i:13013  
 Ştefănescu, Doru Invariance properties of polynomial rings. (Romanian. English summary) 85d:13007  
 Wang, Shi Qiang A class of commutative rings with prime formulas. 85e:13011  
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 Bas, Hyman Automorphisms of polynomial rings. 85b:13009  
 Bhatwadekar, S. M. (with Roy, Amit) Inversion of monic polynomials and existence of unimodular elements. 85i:13016  
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 Janeway, Bill D. Zero divisors in commutative semigroup rings. 85f:20069  
 Johnson, Joseph A note on the structure of graded modules over a polynomial ring. 85c:13013  
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 Lauer, Markus Generalized  $p$ -adic constructions. 85c:11024  
 Lorimer, J. W. Structure theorems for commutative Hjelmslev rings with nilpotent radicals. 85m:13013  
 Mandal, Satyagopal On efficient generation of ideals. 85d:13017  
 Nakajima, Atsushi (with Yokogawa, Kenji) Hopf Galois extensions with Hopf algebras of derivation type. 85i:16011  
 Parimala, Raman (with Sinclair, Parvin) An addendum to: "Quadratic forms over polynomial extensions of rings of dimension one" [J. Pure Appl. Algebra 24 (1982) no. 3, 293-302; MR 83i:10021]. 85b:11032  
 Raina, Ajay K. Invertibility of 2-D systems. 85i:93010  
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 Sathe, A. Polynomial ring in two variables over a DVR: a criterion. 85j:14098  
 Schinzel, Andrzej Le nombre de zéros des polynômes dans les anneaux de valuation des corps complets valués discrètement. [The number of zeros of polynomials in valuation rings of complete fields with discrete valuation] 85c:11118  
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## 13B30 Quotients and localization

- O'Carroll, Liam Generalized fractions, determinantal maps, and top cohomology modules. 85c:13006

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- Bandelt, Hans-J. (with Schmid, Jürg) Multipliers on semilattices and semigroups of quotients. 85m:06010  
 Daepf, Ulrich (with Kuan, Wei Eihn) A note on the localization of a graded ring. 85i:13027  
 Frenkel, J. (with van der Put, M.) Localisation formelle et groupe de Picard. [Formal localization and Picard groups] 85k:32053  
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 Popescu, Nicolae (with Vacariu, Constantin) Sur un problème d'Arens et Kaplansky concernant la structure de quelques anneaux absolument plats commutatifs. [On a problem of Arens and Kaplansky concerning the structure of some absolutely flat commutative rings] 85a:13014  
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- André, Michel Quasi-excellence and formal series. 85j:13009  
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## 13B99 None of the above, but in this section

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- Dobbs, David E. (with Fontana, Marco; Papick, Ira J.) Direct limits and going-down. 85b:13006  
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- Plumstead, B. The conjectures of Eisenbud and Evans. 85d:13010  
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 Fransen, Berthold Exterior powers and torsion-free modules over almost maximal valuation domains. 85e:13012  
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- Crivei, I. Exact sequences of  $R$ -modules for which any simple  $R$ -module is relative injective. (Romanian. English summary) 85e:13015  
 Enochs, Edgar Flat covers and flat cotorsion modules. 85j:13016  
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 Vámos, P. Ideals and modules testing injectivity. 85j:13017  
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- Dugas, Manfred (with Göbel, Rüdiger) Endomorphism algebras of torsion modules. II. 85f:13009  
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- Artin, M. (with Verdier, J.-L.) Reflexive modules over rational double points. 85m:14006  
 Borceux, Francis (with Van den Bosch, Gilbert) ★ Algebra in a localic topos with applications to ring theory. 85h:18005  
 Cohen, Henri (with Lenstra, H. W., Jr.) Heuristics on class groups of number fields. 85j:11144

- Goldsmith, B. An essentially semirigid class of modules. 85j:20053  
 Hill, Paul Toward the classification of mixed groups. 85g:20075  
 Lemstra, H. W., Jr. See Cohen, Henri, 85j:11144  
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### 13C15 Dimension theory, depth, related rings (catenary, etc.)

- Costa, Douglas L. On the torsion-freeness of the symmetric powers of an ideal. 85c:13019  
 Fontana, Marco Sur quelques classes d'anneaux divisibles. (English and Italian summaries) [On some classes of divided rings] 85b:13013  
 Fuchs, L. On projective dimensions of modules over valuation domains. 85h:13009  
 Golod, E. S. G-dimension and generalized perfect ideals. (Russian) 85m:13011  
 Hanna, Charles C. (with Johnson, Jon L.) Homogenization and dimension in  $\Gamma$ -graded rings. 85i:13018  
 Hochster, M. Pathological maximal  $R$ -sequences in quasi-local domains. 85d:13016  
 Johnson, Jon L. See Hanna, Charles C., 85i:13018  
 Mandal, Satyagopal On efficient generation of ideals. 85d:13017  
 McAdam, Stephen (with Ratliff, L. J., Jr.) On the asymptotic cograde of an ideal. 85g:13004  
 Nashier, Beth S. Efficient generation of ideals in polynomial rings. 85f:13010  
 On the conormal bundle of ideals. 85f:13011  
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 Northcott, D. G. Multiplicities of matrices on modules. 85c:13020  
 Park, Chan-Bong The relationship between  $\dim_A(E)$  and  $\dim_B(E)$ . (Korean summary) 85c:13009  
 Ratliff, L. J., Jr. Powers of ideals in locally unmixed Noetherian rings. 85c:13010  
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 Vetter, Udo Generische determinantielle Singularitäten: homologische Eigenschaften des Derivationsmoduls. [Generic determinantal singularities: homological properties of the derivation module] 85i:13019

#### secondary classifications (13C15)

- Amasaki, Mutsumi Preparatory structure theorem for ideals defining space curves. 85j:14006  
 Bartijn, Jaap (with Strooker, Jan R.) Modifications monomiales. [Monomial modifications] 85j:13035  
 Carral, Michel (with Coste, Michel) Normal spectral spaces and their dimensions. 85c:14002  
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 Fuchs, L. (with Salce, L.) Prebasic submodules over valuation rings. 85h:13007  
 Goto, Shiro Every Noetherian uniformly coherent ring has dimension at most 2. 85f:13015  
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 Johnson, Joseph A note on the structure of graded modules over a polynomial ring. 85c:13013  
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 McAdam, Stephen  $\star$  Asymptotic prime divisors. 85f:13018  
 Ng, Ho Kuen Coherent rings of dimension two. 85j:13023  
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 Strooker, Jan R. See Bartijn, Jaap, 85j:13035  
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- Mardones, Ivan  $\star$  Sobre aplicaciones cuadráticas y aplicaciones cúbicas. (Spanish) [Quadratic mappings and cubic mappings] 85f:13012

#### secondary classifications (13C99)

- Bolla, Michael L. Isomorphisms between endomorphism rings of progenerators. 85c:16052  
 Dugas, Manfred On the existence of large mixed modules. 85j:16043  
 Feigelson, Shalom (with Klein, Aaron) Functorial radicals and nonabelian torsion. II. 85b:20053  
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- Iros, Juana (with Rush, David E.) Associated prime ideals in non-Noetherian rings. 85j:13002

- Jain, Raj Kumar On multiplication rings. 85c:13001

- On multiplication ideals. 85c:13002

- Klein, Aaron See Feigelson, Shalom, 85b:20053

- O'Neill, John D. On direct products of modules. 85f:20046

- Reid, J. D. Abelian groups cyclic over their endomorphism rings. 85c:16053

- Rush, David E. See Iros, Juana, 85j:13002

- Schultz, P. See Fransen, W. N., 85c:16040

### 13Dxx Homological methods

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- Andrade, José Fernandes (with Simis, A.)  $\star$  Tópicos de álgebra comutativa. (Portuguese) [Topics in commutative algebra] 85m:13001  
 Simis, A. See Andrade, José Fernandes, 85m:13001

### 13D03 Cohomology of commutative rings and algebras

- André, Michel L'homologie des produits infinis de corps. (English summary) [Homology of infinite products of fields] 85m:13012  
 Avramov, Luchezar (with Halperin, S.) On the structure of the homotopy Lie algebra of a local ring. (See 85d:55001)  
 Félix, Yves (with Löfwall, Clas) Sur le rayon de convergence de la série de Poincaré des anneaux locaux gradués. (English summary) [On the radius of convergence of the Poincaré series of graded local rings] 85k:13013  
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 Hochster, M. Canonical elements in local cohomology modules and the direct summand conjecture. 85j:13021  
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 Huneke, C. Numerical invariants of liaison classes. 85i:13021  
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 Shimoda, Yasuhiro On the syzygy part of Koszul homology on certain ideals. 85j:13022

#### secondary classifications (13D03)

- Avramov, Luchezar Descente des déviations par homomorphismes locaux et génération des idéaux de dimension projective finie. (English summary) [Descent of deviations under local homomorphisms and generation of ideals of finite projective dimension] 85a:14007  
 Local algebra and rational homotopy. 85j:55021  
 Brodmann, Markus Local cohomology of certain Rees- and form-rings. II. 85i:13026  
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 Goto, Shiro On the associated graded rings of parameter ideals in Buchsbaum rings. 85d:13032  
 Noetherian local rings with Buchsbaum associated graded rings. 85g:13006  
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 O'Carroll, Liam Generalized fractions, determinantal maps, and top cohomology modules. 85c:13006  
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 Sharp, R. Y. (with Zakeri, H.) Local cohomology and modules of generalized fractions. 85b:13035  
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### 13D05 Homological dimension

- Backelin, Jürgen Les anneaux locaux à relations monomiales ont des séries de Poincaré-Betti rationnelles. (English summary) [Local rings with monomial relations have rational Poincaré-Betti series] 85a:13008  
 Monomial ideal residue class rings and iterated Golod maps. 85h:13011  
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 Hersog, J. (with Kühl, M.) On the Betti numbers of finite pure and linear resolutions. 85c:13021  
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#### secondary classifications (13D05)

- André, Michel Le caractère additif des déviations des anneaux locaux. [The additive character of the deviations of local rings] 85a:14006  
 Munkres, James R. Topological results in combinatorics. 85k:13022  
 Nakajima, Haruhisa Rings of invariants of finite groups which are hypersurfaces. 85c:20036



### 13D10 Deformations and infinitesimal methods [See also 14D15, 16A58, 32Gxx.]

- Avramov, Luchesar Local rings of finite simplicial dimension. **85j:13024**  
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- De Concini, Corrado (with Eisenbud, D.; Procesi, Claudio) ★ Hodge algebras. **85d:13009**  
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### 13D15 Grothendieck group, $K$ -theory [See also 14F15, 18F25, 18F30.]

- Ischebeck, Friedrich On the Picard group of polynomial rings. **85j:13026**  
 van der Kallen, Wilberd A group structure on certain orbit sets of unimodular rows. **85b:13014**  
 Sharko, V. V. Minimal chain complexes. (Russian) **85j:13027**  
 Shimada, Nobuo Note on symbols in  $K_n$ . **85d:13020**  
 Zaks, Abraham On a problem of Kaplansky. II. Every finitely generated abelian group is the restricted Grothendieck group of a local, Noetherian, Krull domain. **85e:13011**

#### secondary classifications (13D15)

- Bruns, Winfried Divisors on varieties of complexes. **85d:13021**  
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 Suslin, A. Stability in algebraic  $K$ -theory. **85d:18011**  
 Verschoren, A. Braver groups and class groups for Krull domains: a  $K$ -theoretic approach. **85j:13006**

### 13D25 Complexes [See also 14Mxx.]

- Bruns, Winfried Divisors on varieties of complexes. **85d:13021**  
 Foxby, Hans-Bjørn Complexes of injective modules. **85e:13023**  
 Herzog, J. (with Simis, A.; Vasconcelos, W. V.) Approximation complexes of blowing-up rings. II. **85b:13015**  
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 Construction of coproducts in categories of complexes. **85i:13024**  
 Kustin, Andrew R. (with Miller, Matthew) Constructing big Gorenstein ideals from small ones. **85f:13014**  
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#### secondary classifications (13D25)

- Avramov, Luchesar Local algebra and rational homotopy. **85j:55021**  
 Baclawski, Kenneth Canonical modules of partially ordered sets. **85a:06001**  
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 Foxby, Hans-Bjørn The MacRae invariant. **85e:13033**  
 Huneke, C. Numerical invariants of liaison classes. **85i:13021**  
 Kirby, David An addendum to Lech's limit formula for multiplicities. **85f:13024**  
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### 13D30 Torsion theory [See also 13C12, 16A63, 18E40.]

- Damiano, Robert (with Shapiro, Jay) Commutative torsion stable rings. **85e:13024**  
 Ivanov, A. F. On an "arithmetic" functor. (Russian) **85a:13009**  
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#### secondary classifications (13D30)

- Ahsan, J. (with Enochs, Ed) Rings all of whose torsion quasi-injective modules are injective. **85h:16032**  
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 Verschoren, A. Relative seminormalization. I. **85e:13014**  
 Yahya, S. M. On an isomorphism. **85d:13013**

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- Bogvad, Rikard Gorenstein rings with transcendental Poincaré-series. **85c:13012**  
 Gräbe, Hans-Gert The canonical module of a Stanley-Reisner ring. **85a:13010**  
 O'Carroll, Liam On the generalized fractions of Sharp and Zakeri. **85e:13025**

## 13Exx Chain conditions, finiteness conditions

### 13E05 Noetherian rings and modules

- Caruth, A. Two theorems on complete commutative rings. **85e:13026**  
 Dale, Louis Generalized ascending chains with an application to Hilbert's theorem. **85j:13029**  
 Gilmer, Robert (with Heinzer, William) Noetherian pairs and hereditarily Noetherian rings. **85d:13022**  
 Goto, Shiro Every Noetherian uniformly coherent ring has dimension at most 2. **85f:13015**  
 Heinzer, William See Gilmer, Robert, **85d:13022**  
 Kumar, Ravinder (with Nishimura, Jun-ichi) Note to: "Every Noetherian uniformly coherent ring has dimension at most 2" [J. Math. Kyoto Univ. **23** (1983), no. 2, 269-279; MR **85f:13015**] by S. Goto. **85f:13016**  
 Langmann, Klaus Treuflacher Limes noetherscher Ringe. [Faithfully flat limit of Noetherian rings] **85f:13017**  
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 Mora, Fulvio (with Raimondo, Mario) On Noetherianness of Nash rings. **85g:13005**  
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 A brief survey and history of asymptotic prime divisors. **85b:13018**  
 Yamagishi, Kikumichi Embedding of Noetherian rings into faithful modules. **85e:13028**

#### secondary classifications (13E05)

- André, Michel L'homologie des produits infinis de corps. (English summary) [Homology of infinite products of fields] **85m:13012**  
 Barucci, Valentina (with Dobbs, David E.) On chain conditions in integral domains. **85h:13016**  
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 Heinzer, William (with Lantz, David)  $N$ -rings and ACC on colon ideals. **85i:13007**  
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 Perlé, V. Eine Charakterisierung der Menge  $\text{Ass}(\mathfrak{A})$  in kommutativen Noetherschen Ringen. (English summary) [A characterization of the set  $\text{Ass}(\mathfrak{A})$  in Noetherian commutative rings] **85i:13005**  
 Porter, Timothy The kernels of completion maps and a relative form of Nakayama's lemma. **85c:16037**  
 Ratliff, L. J., Jr. On asymptotic prime divisors. **85c:13003**  
 Shapiro, Jay See Damiano, Robert, **85e:13024**

### 13E10 Artinian rings and modules, finite-dimensional algebras

- Iarrobino, Anthony Compressed algebras: Artin algebras having given socle degrees and maximal length. **85j:13030**  
 Zöchinger, Helmut Linear-kompakte Moduln über noetherschen Ringen. [Linearly compact modules over Noetherian rings] **85d:13024**

#### secondary classifications (13E10)

- Gheorghiu, O. Em. (with Izverceanu, P. N.) On a class of commutative algebras. **85h:13001**  
 Herzog, J. Necessary conditions for an analytic algebra to be strict. **85d:13019**  
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 Kimura, Tetsuo  $p$ -basis of an Artinian local ring of characteristic  $p$ . **85f:13021b**  
 Nechaev, A. A. Similarity of matrices over a commutative local Artinian ring. (Russian. English summary) **85i:15027**

## 13E15 Rings and modules of finite generation or representation

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Johnson, Joseph A note on the structure of graded modules over a polynomial ring. 85c:13013

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## secondary classifications (13E15)

Constantinescu, Adrian On the algebraization of some complex schemes. 85m:14005

Dobbs, David E. (with Fontana, Marco) Universally incomparable ring-homomorphisms. 85c:13007

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Gilmer, Robert (with Heinzer, William) Noetherian pairs and hereditarily Noetherian rings. 85d:13022

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Beauchy, John A. (with Weakley, William D.) Piecewise Noetherian rings. 85k:13016

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## secondary classifications (13E99)

Dale, Lovia Generalized ascending chains and formal power series rings. 85e:13030

Kumar, Ravinder A note on locally Noetherian pairs. 85f:13019

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Renault, G. (with Simões, M. E. Antunes) Anneaux de Dedekind dont le groupe des classes est fini. [Dedekind rings whose class group is finite] 85d:13028

Simões, M. E. Antunes See Renault, G., 85d:13028

Thakare, Nimbakrishna K. (with Manjarekar, C. S.) Radicals and uniqueness theorems in multiplicative lattices with chain conditions. 85i:00030

## 13Fxx Arithmetic rings [See also 12-XX.]

## 13F05 Dedekind and Prüfer rings and their generalizations

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Dobbs, David E. See Anderson, D. D.; et al., 85m:13014

Gilmer, Robert (with Smith, William W.) Finitely generated ideals of the ring of integer-valued polynomials. 85b:13020

Gräter, Joachim  $R$ -Prüfering and Bewertungsfamilien. [ $R$ -Prüfer rings and valuation families] 85k:13017

Hansen, Jutta (with Johnson, Johnny A.) A characterization of two classes of Dedekind domains by properties of their modules. 85b:13021

Hillman, Jonathan A. Polynomials determining Dedekind domains. 85b:13013

Houston, Evan G. (with Malik, Saroj B.; Mott, Joe L.) Characterizations of  $\ast$ -multiplication domains. 85d:13026

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Smith, William W. See Gilmer, Robert, 85b:13020

Swaminathan, Thanjarur Venkata Arithmetical Boolean-like rings. 85k:13018

Swan, Richard G.  $n$ -generator ideals in Prüfer domains. 85k:13019

## secondary classifications (13F05)

Abouabdillah, Driss Topologies de corps  $A$  linéaires. [ $A$ -linear field topologies] 85c:12008

Alajbegović, Jusuf Approximation theorems for Manis valuations with the inverse property. 85k:13002

Anderson, D. D. (with Anderson, David F.) Locally factorial integral domains. 85b:13014

Anderson, David F. See Anderson, D. D., 85b:13014

Archinard, G. Submodules of a torsion-free and finitely generated module over a Dedekind ring. 85i:13015

Barucci, Valentina (with Dobbs, David E.) On chain conditions in integral domains. 85b:13016

Dicks, Warren (with Stephenson, W.) Epimorphisms and dominions of Dedekind domains. 85i:16054

Dobbs, David E. (with Fontana, Marco) Locally pseudovaluation domains. (Italian summary) 85j:13034

(with Fontana, Marco) Universally going-down integral domains. 85i:13009

See also Barucci, Valentina, 85b:13016

Falsh, Carl The structure of valuation rings. 85k:13003

Fontana, Marco (with Huckaba, James A.; Papick, Ira J.) Divisorial prime ideals in Prüfer domains. 85m:13002

See also Dobbs, David E., 85i:13009 and 85j:13034

Huckaba, James A. See Fontana, Marco; et al., 85m:13002

Jain, Raj Kumar On multiplication rings. 85c:13001

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Spangher, Walter See Portelli, Dario, 85b:13025

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Van Oystaeyen, F. Some constructions of rings. 85f:16051

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- Félix, Yves (with Löffwall, Clas) Sur le rayon de convergence de la série de Poincaré des anneaux locaux gradués. (English summary) [On the radius of convergence of the Poincaré series of graded local rings] 85k:13013
- Fischer, Klaus Derivations and smooth discriminant. 85e:14006
- Goto, Shiro Every Noetherian uniformly coherent ring has dimension at most 2. 85f:13015
- Kumar, Ravinder (with Nishimura, Jun-ichi) Note to: "Every Noetherian uniformly coherent ring has dimension at most 2" [J. Math. Kyoto Univ. 23 (1983), no. 2, 269-279; MR 85f:13015] by S. Goto. 85f:13016
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#### 13J10 Complete rings

secondary classifications (13J10)

- Lequain, Yves See de Souza Doering, Ada Maria, 85c:13001  
 Ratliff, L. J., Jr. Powers of ideals in locally unmixed Noetherian rings. 85c:13010  
 Singh, Balwant Maximally differential prime ideals in a complete local ring. 85f:13004  
 de Souza Doering, Ada Maria (with Lequain, Yves) Chain of prime ideals in formal power series rings. 85c:13001  
 Stănişescu, Doru On analytic independence. (Romanian. English summary) 85j:13038

#### 13J15 Henselian rings

- Chen, Bing Hui (with Qi, Zhi Nan) On Henselian valuation rings. (Chinese) (Not in MR)  
 Estrada, Mario Einige Bemerkungen über Ringe mit Approximationseigenschaft. II. [Some remarks on rings with approximation property. II] 85d:13039  
 Qi, Zhi Nan See Chen, Bing Hui, (Not in MR)

secondary classifications (13J15)

- Brown, Martin Lawrence On 2-dimensional local rings with Artin's approximation property. 85b:14006  
 Artin approximation and formal fibres of local rings. 85b:13031  
 Ershov, Yu. L. Absolute irreducibility and Henselization properties. (Russian) 85c:12007  
 Kurke, Herbert (with Pfister, Gerhard) Weierstrass categories and the property of approximation. 85c:14004  
 Pfister, Gerhard See Kurke, Herbert, 85c:14004  
 Strano, Rosario Principal homogeneous spaces over Hensel rings. 85b:14025

#### 13J20 Global topological rings

- Weber, Hans Bestimmung aller Integritätsbereiche, deren einzige lokalbeschränkte Ringtopologien Idealtopologien sind. [Determination of all integral domains whose only locally bounded ring topologies are ideal topologies] 85g:13009

secondary classifications (13J20)

- Mazan, Michel Étude de la dualité dans les modules. [A study of duality in modules] 85f:46094  
 Vizitiu, V. N. Continuous extension of differentiations of rings. (Russian) 85i:13008

#### 13J99 None of the above, but in this section

- Popescu, Nicolae (with Vraciu, Constantin) Sur un problème d'Arens et Kaplansky concernant la structure de quelques anneaux absolument plats commutatifs. [On a problem of Arens and Kaplansky concerning the structure of some absolutely flat commutative rings] 85a:13014  
 Prodanov, Ivan Hensel modules. 85j:13039  
 Stoyanov, Luchezar N. Dualities over compact commutative rings. 85h:13018  
 Vraciu, Constantin See Popescu, Nicolae, 85a:13014

secondary classifications (13J99)

- Abouabdillah, Drias Topologies de corps  $A$  linéaires. [ $A$ -linear field topologies] 85c:12008

### 13K05 Witt vectors and related rings

- Hasewinkel, Michel Operations in the  $K$ -theory of endomorphisms. 85k:13025

secondary classifications (13K05)

- Cibila, Claude Groupe de Witt d'une algèbre avec involution. [Witt group of an algebra with involution] 85c:11041a  
 Lewis, D. W. Exact sequences of Witt groups of equivariant forms. 85c:11041b  
 Metropolis, N. (with Rota, Gian-Carlo) Witt vectors and the algebra of necklaces. 85d:05026  
 Rota, Gian-Carlo See Metropolis, N., 85d:05026

### 13L05 Applications of logic to commutative algebra [See also 03Cxx, 03Hxx.]

- van den Dries, L. ★ Reducing to prime characteristic. 85f:13025

Exponential rings, exponential polynomials and exponential functions. 85j:13040  
 Español, L. Le spectre d'un anneau dans l'algèbre constructive et applications à la dimension. [The spectrum of a ring in constructive algebra and applications to dimension] 85c:13034

- Robinson, Edmund Stable theories of local rings. 85d:13040

- Ruyer, Hélène Deux résultats concernant les modules sur un anneau de Dedekind. (English summary) [Two results about modules over a Dedekind domain] 85b:13037  
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 Toffalori, Carlo Stability, categoricity and elimination of quantifiers for a class of local rings. (Italian. English summary) 85b:13038

secondary classifications (13L05)

- Contessa, M. Ultraproducts of pm-rings and mp-rings. 85i:03096  
 van den Dries, L. (with Schmidt, Karsten) Bounds in the theory of polynomial rings over fields. A nonstandard approach. 85i:12016  
 Macintyre, A. Decision problems for exponential rings: the  $p$ -adic case. 85f:12014  
 Schmidt, Karsten See van den Dries, L., 85i:12016  
 Smith, Kay Commutative regular rings and Boolean-valued fields. 85i:03161  
 Stepráns, Juris The number of submodules. (Chinese. English summary) 85g:11009  
 Toffalori, Carlo On a class of differential local rings. (Italian. English summary) 85f:13026  
 Wang, Shi Qiang (with Wu, Tao) Extensions, without the Goldbach property of quadratic rings of algebraic integers. (Chinese. English summary) 85g:11009  
 A class of commutative rings with prime formulas. 85c:13011  
 Wu, Tao See Wang, Shi Qiang, 85g:11009

### 13Mxx Finite commutative rings (For number-theoretic aspects, see 11Txx.)

#### 13M05 Structure

- Gallian, Joseph A. (with Van Buskirk, James) The number of homomorphisms from  $Z_m$  into  $Z_n$ . 85h:13019  
 Van Buskirk, James See Gallian, Joseph A., 85h:13019

#### 13M10 Polynomials

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- Anashin, V. S. Solvable groups with operators and commutative rings having transitive polynomials. (Russian) 85d:20028

### 13N05 Differential algebra [See also 12H05.]

- Dudek, Z. Some properties of Wronskian in QL-algebras. (See 85d:34002)  
 Goodearl, K. R. Centralizers in differential, pseudodifferential, and fractional differential operator rings. 85b:13039  
 Hart, Robert Differential operators on affine algebras. 85b:13040  
 Keigher, William F. Spectra of differential rings. 85g:13010  
 Nowicki, Andrzej Some remarks on  $d$ -MP rings. (Russian summary) 85b:13041  
 Quasiprime and  $d$ -prime ideals in commutative differential rings. 85c:13019  
 Patil, D. P. (with Singh, Balwant) Remarks on maximally differential prime ideals. 85b:13042  
 Singh, Balwant See Patil, D. P., 85b:13042  
 Toffalori, Carlo On a class of differential local rings. (Italian. English summary) 85f:13026

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- Denef, J. (with Lipsitz, L.) Power series solutions of algebraic differential equations. 85j:12010  
 Ishimura, Ryuichi Sur les équations différentielles dans l'espace des polynômes et dans l'espace des séries formelles. [On differential equations in the space of polynomials and in the space of formal series] 85a:35007  
 Johnson, Joseph Order for systems of differential equations and a generalization of the notion of differential ring. 85i:12010  
 Lipsitz, L. See Denef, J., 85j:12010  
 Przeworska-Rolewicz, D. Picone's identity in non-Leibniz algebras. 85c:47003  
 Rosenlicht, Maxwell The rank of a Hardy field. 85d:12002  
 Verschoren, A. Differential rings with polynomial identities. I. Quasiprime ideals in noncommutative differential rings. 85b:16029

### 14-XX ALGEBRAIC GEOMETRY

#### 14-01 Elementary exposition; textbooks

- (Artamkin, I. V.) See Clemens, C. Herbert, 85m:14001  
 Clemens, C. Herbert ★ Мозаика теории комплексных кривых. [A scrapbook of complex curve theory] 85m:14001  
 (Tyurin, A. N.) See Clemens, C. Herbert, 85m:14001

#### 14-02 Advanced exposition (research surveys, monographs, etc.)

- Giraud, Jean La géométrie algébrique et quelques problèmes classiques. [Algebraic geometry and some classical problems] (See 85g:00026)

**Tyurin, A. N.** Studies in the geometry of algebraic varieties in the algebra section of the Mathematics Institute of the Academy of Sciences. (Russian) 85j:14001  
**Open problems** Open problems. 85b:14001  
**Problems** Problems. 85b:14002

#### secondary classifications (14-02)

(Barlow, Rebecca) See Beauville, Arnaud, 85a:14034  
 Beauville, Arnaud ★ Complex algebraic surfaces. 85a:14034  
 Conte, A. ★ Introduzione alle varietà algebriche a tre dimensioni. (Italian) [Introduction to three-dimensional algebraic varieties] 85f:14042  
 Fulton, William ★ Intersection theory. 85k:14004  
 Itaka, Shigeru Birational geometry and logarithmic forms. 85g:14041  
 Kung, Joseph P. S. (with Rota, Gian-Carlo) The invariant theory of binary forms. 85g:05002  
 Maruyama, Masaki Moduli of stable sheaves—generalities and the curves of jumping lines of vector bundles on  $P^2$ . 85b:14021  
 Algebraic vector bundles. 85c:14009  
 Milne, J. S. ★ ЭТАЛЬНЫЕ КОМОЛОГИИ. (Russian) [Étale cohomology] 85a:14015  
 Miyazaki, Masayoshi On group actions. 85c:14030  
 Oda, Tadao Abelian varieties and related topics in algebraic geometry. 85d:14058  
 (Reid, Miles) See Beauville, Arnaud, 85a:14034  
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 (Shafarevich, I. R.) See Milne, J. S., 85a:14015  
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 (Vvedenskii, O. N.) See Milne, J. S., 85a:14015  
 (Zarkhin, Yu. G.) See Milne, J. S., 85a:14015

#### 14-03 Historical (must also be assigned at least one classification number from Section 01)

Laskaev, Dan Notes on the evolution of complete correlations. 85a:14001  
 Valabrega, Paolo Algebraic aspects of the theory of dimension. (Italian) 85g:14001

#### secondary classifications (14-03)

Ayoub, Raymond The lemniscate and Fagnano's contributions to elliptic integrals. 85g:01015  
 Coxeter, H. S. M. The twenty-seven lines on the cubic surface. 85b:14046  
 (Fagnano, Giulio) See Ayoub, Raymond, 85g:01015  
 Kauchikas, A. P. Double equations in the work of Diophantus and of P. Fermat. (Russian) 85g:01008b  
 Slavutin, E. I. Geometric interpretation of the methods for solving "double equations" in Diophantus of Alexandria's *Arithmetica*. (Russian) 85g:01008a  
 Tyurin, A. N. Studies in the geometry of algebraic varieties in the algebra section of the Mathematics Institute of the Academy of Sciences. (Russian) 85j:14001  
 Weil, André Euler and the Jacobians of elliptic curves. 85d:14060

#### 14-04 Explicit machine computation and programs (not the theory of computation or programming)

Arnon, Dennis S. (with McCallum, Scott) A polynomial-time algorithm for the topological type of a real algebraic curve—extended abstract. (See 85i:12002)  
 McCallum, Scott See Arnon, Dennis S., (85i:12002)

#### secondary classifications (14-04)

Mora, Ferdinando Classification of monomial curves. (Italian summary) 85j:14092

#### 14-06 Proceedings, conferences, etc.

(Bădescu, Lucian) See Algebraic geometry, 85g:14002  
 (Geramita, A. V.) See Seminar: Queen's, curves, 85m:14003a and 85m:14003b  
 (Greco, Silvio) See Complete intersections, 85k:14001  
 (Kostrikin, A. I.) See Algebraic geometry and its applications, 85g:14003  
 (Popescu, Dorin) See Algebraic geometry, 85g:14002  
 (Strano, Rosario) See Complete intersections, 85k:14001  
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 Algebraic geometry ★ Algebraic geometry, Bucharest 1982. 85g:14002  
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 Algebraic groups and related topics ★ Algebraic groups and related topics. (Japanese) 85b:14001  
 Bologna ★ Seminario di variabili complesse, 1981. (Italian) [Seminar on complex variables, 1981] 85g:14004  
 Bucharest ★ Algebraic geometry, Bucharest 1982. 85g:14002  
 Cohomologie p-adique ★ Cohomologie p-adique. (French) [p-adic cohomology] 85i:14001  
 Complete intersections ★ Complete intersections. 85k:14001  
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 Kingston, Ont. ★ The curves seminar at Queen's. Vol. II. 85m:14003a  
 Recent results on singularities of varieties ★ Recent results on singularities of varieties. 85m:14002  
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 Complex variables ★ Seminario di variabili complesse, 1981. (Italian) [Seminar on complex variables, 1981] 85g:14004  
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 Queen's, curves ★ The curves seminar at Queen's. Vol. II. 85m:14003a  
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 CIME, complete intersections ★ Complete intersections. 85k:14001

#### Symposium:

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 (Dubois, Didier) See Ordered fields and real algebraic geometry, 85i:12002  
 (Hirzebruch, F.) See van der Waerden, B. L., 85b:01099  
 (Morita, Yasuo) See Automorphic forms of several variables, 85g:11003  
 (Satake, Ichirō) See Automorphic forms of several variables, 85g:11003  
 van der Waerden, B. L. ★ Zur algebraischen Geometrie. (German) [On algebraic geometry] 85b:01099  
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 Automorphic forms of several variables ★ Automorphic forms of several variables. 85g:11003  
 Bibliography:  
 van der Waerden, Bartel Leendert See van der Waerden, B. L., 85b:01099  
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 Boulder, Colo. ★ Ordered fields and real algebraic geometry. 85i:12002  
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14A05 Relevant commutative algebra [See also 13-XX.]

Krauter, William W. Irreducible components of the spectrum of an affine ring. 85e:14001

Saliba, Christiane Le théorème des zéros centraux. (English summary) [Central nullstellensatz] 85e:14002

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Dolgachev, Igor V. Weighted projective varieties. 85g:14060  
 Garel, Emmanuelle An extension of the trace map. 85f:14003  
 Olivier, J.-P. Going up along absolutely flat morphisms. 85c:14005  
 Tamone, Grazia A connection between blowing-up and gluings in one-dimensional rings. 85k:13024  
 Valabrega, Paolo Algebraic aspects of the theory of dimension. (Italian) 85g:14001  
 Yangihara, Hiroshi Some results on weakly normal ring extensions. 85e:13010

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 Marinari, Maria Grazia Two remarks on integral morphisms of affine k-varieties. (Italian summary) 85m:14004

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## 14A20 Generalizations (algebraic spaces, motifs)

Carral, Michel (with Coste, Michel) Normal spectral spaces and their dimensions. 85c:14002

Cherenack, P. Algebraic transversality. 85d:14001

Coste, Michel See Carral, Michel, 85c:14002

Lavendhomme, René (with Lucas, Thierry Eugène) Vers une géométrie algébrique générale. [Toward a general algebraic geometry] 85e:14004

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Robson, Robert Embedding semi-algebraic spaces. 85c:14017

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Ulrich, Karl-Heinz Sur l'injection de  $\text{Ext}(S, S_A^A)$  dans  $\widehat{\text{Br}}(A/k)$ . (English summary) [On the injection of  $\text{Ext}(S, S_A^A)$  into  $\widehat{\text{Br}}(A/k)$ ] 85k:14011

Van Oystaeyen, F. (with Verschoren, A.) Derivations of PI-algebras and smoothness of noncommutative curves. 85c:16007

Verschoren, A. On the seminormalization of noncommutative affine curves. 85d:14045  
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## 14A99 None of the above, but in this section

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Gerstenhaber, Murray (with Schack, Samuel D.) On the deformation of algebra morphisms and diagrams. 85d:16021

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## 14Bxx Local theory [See also 32Bxx.]

## 14B05 Singularities [See also 14E15, 32B30, 32C40, 58C27.]

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Brodmann, Markus Some remarks on blow-up and conormal cones. 85a:14003

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On the monodromy groups of singularities. 85d:14003

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Fischer, Klaus Derivations and smooth discriminant. 85e:14006

Gaffney, Terence Multiple points and associated ramification loci. 85g:14005

Ishida, Masa-Nori Tsuchihashi's cusp singularities are Buchsbaum singularities. 85f:14002

Khovanskii, A. G. Newton polyhedra (resolution of singularities). (Russian) 85j:14002

Lyashko, O. V. Appendix to: "Graphs, singularities and finite groups" [The Santa Cruz conference on finite groups (Santa Cruz, Calif., 1979), 183-186, Proc. Sympos. Pure Math., 37, Amer. Math. Soc., Providence, R.I., 1980; MR 82e:20014] by J. McKay. (Russian) 85k:14002

Manaresi, Mirella Singularities and hyperplane sections of seminormal and weakly normal varieties. (Italian) (See 85g:14004)

Martin, Bernd (with Pfister, Gerhard) Milnor number of complete intersections and Newton polygons. 85m:14007

(McKay, J.) See Lyashko, O. V., 85k:14002

Michel, Françoise Formes de Seifert et singularités isolées. [Seifert forms and isolated singularities] 85d:14004

Morales, Marcelo Calcul de quelques invariants des singularités de surface normale. [Calculation of some invariants of normal surface singularities] 85j:14003

Morrison, David R. (with Stevens, Glenn) Terminal quotient singularities in dimensions three and four. 85a:14004

Mulay, S. B. Equimultiplicity and hyperplanarity. 85d:14005

Narasimhan, R. Monomial equimultiple curves in positive characteristic. 85d:14006

Navarro Aznar, Vicente Sur les multiplicités de Schubert locales des faisceaux algébriques cohérents. [Local Schubert multiplicities of coherent algebraic sheaves] 85g:14006

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Rocsen, M. Some properties of the canonical resolutions of the 3-dimensional singularities  $A_n$ ,  $D_n$ ,  $E_n$  over a field of characteristic  $\neq 2$ . 85j:14004

Stevens, Glenn See Morrison, David R., 85a:14004

Thomas, Emery Defects of cusp singularities. 85d:14007

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Benson, Max Loell Analytic equivalence of isolated hypersurface singularities defined by homogeneous polynomials. 85j:32011

Brieskorn, E. ★ Die Milnorgitter der exceptionellen unimodularen Singularitäten. (German) [The Milnor lattices of exceptional unimodal singularities] 85k:32014

Brodmann, Markus Two types of birational models. 85g:14061

Broughton, S. Allen On the topology of polynomial hypersurfaces. 85d:14033

Campillo López, Antonio (with Castellanos, J.) On projections of space algebroid curves. 85g:14029

On saturations of curve singularities (any characteristic). 85b:14034

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Dimca, Alexandru Tangencies of generic real projective hypersurfaces. 85m:58028

(with Gibson, C. G.) Contact unimodular germs from the plane to the plane. 85e:58021a

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Dolgachev, Igor V. Weighted projective varieties. 85g:14060

Durfee, Alan H. Four characterizations of real rational double points. 85f:32008

A naive guide to mixed Hodge theory. 85b:32044

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Four characterizations of real rational double points. 85g:32007

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Giusti, Marc Classification des singularités isolées simples d'intersections complètes. [Classification of the simple isolated singularities of complete intersections] 85d:32024

Golubina, L. V. (with Gudkov, D. A.) Classification of sets of singular points of unicursal plane fifth-order curves. (Russian) 85b:51043

González-Sprinberg, G. (with Verdier, J.-L.) Construction géométrique de la correspondance de McKay. [Geometric construction of the McKay correspondence] 85k:14019

Gudkov, D. A. See Golubina, L. V., 85b:51043

Henry, Jean-Pierre Georges (with Merle, M.) Limites de normales, conditions de Whitney et éclatement d'Hironaka. [Limits of normals, Whitney conditions and the Hironaka blowing-up] 85j:32018

Hiura, Masayuki See Yoshinaga, Etsuo; et al., 85h:32009

Ilyashenko, Yu. S. (with Pyartli, A. S.) A polynomial vector field with singular points of only Poincaré type. (Russian) 85b:58020

Janssen, W. A. M. Skew-symmetric vanishing lattices and their monodromy groups. 85f:11043

Kersken, Masumi Reguläre Differentialformen. (English summary) [Regular differential forms] 85j:14032

Kostant, Bertram On finite subgroups of  $SU(2)$ , simple Lie algebras, and the McKay correspondence. 85h:22020

Kraft, Hanspeter (with Procesi, Claudio) On the geometry of conjugacy classes in classical groups. 85b:14065

Langevin, R. Metric study of the neighbourhood of a singularity. 85e:32011

Libgober, A. A characterization of plane curve singularities with one characteristic pair. 85j:14050

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Sabbah, C. Morphismes analytiques stratifiés sans éclatement et cycles évanescents. [Stratified analytic morphisms without blowing-up and vanishing cycles] 85j:32017

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 Shimada, Nobuo (with Shimakawa, Kazuhisa) Algebraic  $K$ -theory—its homotopy-theoretic aspect. (Japanese) 85b:18010  
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 A remark on the structure of algebraic  $K$ -theory mod  $l$ . 85k:18021

- Soulé, Christophe  $K_2$  et le groupe de Brauer (d'après A. S. Merkurjev et A. A. Suslin). [ $K_2$  and the Brauer group (after A. S. Merkurjev and A. A. Suslin)] 85f:11085  
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- Stienstra, Jan On the formal completion of the Chow group  $\text{CH}^2(X)$  for a smooth projective surface in characteristic 0. 85m:14010

## 14C40 Riemann-Roch theorems [See also 14F12.]

- Marchionna, Ermanno Characters of divisors of an algebraic variety. (Italian. English summary) 85b:14012

## secondary classifications (14C40)

- Ein, Lawrence Surfaces with hyperelliptic hyperplane section. 85b:14044  
 Faltings, Gerd Properties of Arakelov's intersection product. 85m:14044  
 Fujita, Takao Canonical rings of algebraic varieties. 85a:14012  
 Fulton, William ★ Intersection theory. 85i:14004  
 Kollár, J. (with Matsusaka, T.) Riemann-Roch type inequalities. 85c:14007  
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## 14C99 None of the above, but in this section

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- Laumon, Gérard Vanishing cycles over a base of dimension  $\geq 1$ . 85k:14010

## 14Dxx Families, fibrations

## 14D05 Structure of families (Picard-Lefschetz, Picard-Fuchs theory, etc.)

- Aomoto, Kasuhiko Addition theorem of Abel type for hyper-logarithms. 85m:14013  
 Camuto, Giuseppe Galois groups and monodromy groups in algebraic geometry. (Italian) (See 85g:14004)  
 Cherednik, I. V. On the properties of factorized  $S$  matrices in elliptic functions. 85d:14018  
 Kawamata, Yujiro Hodge theory and Kodaira dimension. 85j:14012  
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- Aomoto, Kasuhiko Configurations and invariant Gauss-Manin connections of integrals. I. 85k:32022  
 Barbançon, Gérard Monodromy of the Newton mapping. 85d:32011  
 Borisov, A. B. The Hilbert problem for matrices and a new class of integrable equations. 85e:58061  
 Briançon, Joël (with Maisonobe, Philippe) Idéaux de germes d'opérateurs différentiels à une variable. [Ideals of germs of differential operators in one variable] 85k:32020  
 Broughton, S. Allen On the topology of polynomial hypersurfaces. 85d:14033  
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 Christol, G. Diagonales de fractions rationnelles et équations différentielles. [Diagonals of rational fractions and differential equations] 85k:12003  
 Clemens, Herbert On the surjectivity of Abel-Jacobi mappings. 85b:14061  
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 Gérard, R. La géométrie des transcendentes de P. Painlevé. [The geometry of Painlevé transcendents] 85f:58103  
 Goldstein, Norman Finding the nondegenerate quadratic singularities. 85a:14033  
 Imayoshi, Yôichi Generalizations of de Franchis theorem. 85d:32051  
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- Terada, Tohichi Functions hypergéométriques  $F_1$  et fonctions automorphes. I. [Hypergeometric functions  $F_1$  and automorphic functions. I] 85g:34009  
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14D15 Formal methods; deformations [See also 13D10, 14B07, 16A58, 32Gxx.]

- Fujita, Takao Rational retractions onto ample divisors. 85d:14019  
 Popescu, Dorin Global form of Néron's  $p$ -desingularization and approximation. 85i:14003  
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 Rocas, M. Deformations of embeddings with ample conormal bundle. 85g:14011  
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- Friedman, Robert David (with Miranda, Rick) Smoothing cusp singularities of small length. 85c:14003  
 Griffin, Edmund E., II On a family of special linear systems on algebraic curves. 85i:14034  
 Kata, Sheldon Degenerations of quintic threefolds and their lines. 85e:14059  
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 Welter, G. E. Polarized abelian varieties and the heat equations. 85f:14045

14D20 Algebraic moduli problems [For analytic moduli problems, see 32G13.]

- Bardelli, Fabio Counterexamples to Torelli theorem in any odd dimension greater than one. (Italian summary) 85d:14021  
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 On polarized manifolds of  $\Delta$ -genus two. I. 85m:14015  
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 Le Bars, P. Platitude et nonplatitude de certains sous-schémas de  $Hilb^k P^N$ . [Flatness and nonflatness of certain subschemes of  $Hilb^k P^N$ ] 85m:14016  
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 Mukai, Shigeru Symplectic structure of the moduli space of sheaves on an abelian or  $K3$  surface. 85j:14016  
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 Blăniș, Constantin Topologisch triviale holomorphe Vektorbündel auf  $P^n(C)$ . [Topologically trivial holomorphic vector bundles on  $P^n(C)$ ] 85d:14026  
 Barth, Wolf Paul Lectures on mathematical instanton bundles. 85c:14008  
 Bhoosle-Desale, U. N. Moduli of orthogonal and spin bundles over hyperelliptic curves. 85j:14024  
 Degenerate symplectic and orthogonal bundles on  $P^1$ . 85j:14025  
 Chang, Mei Chu Stable rank 2 bundles on  $P^3$  with  $c_1 = 0$ ,  $c_2 = 4$ , and  $\alpha = 1$ . 85g:14022  
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 Dubrovnik, B. A. Multidimensional theta functions and their application to the integration of nonlinear equations. 85j:14084  
 Fania, Maria Lucia Extension of modifications of ample divisors on fourfolds. 85k:14021  
 Friedman, Robert David Global smoothings of varieties with normal crossings. 85g:32029  
 Fujita, Takao On the structure of polarized manifolds with total deficiency one. III. 85c:14061  
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 Hoppe, Hans Jürgen Modulräume stabiler Vektorraumbündel vom Rang 2 auf rationalen Regelflächen. [Moduli spaces of stable rank 2 vector bundles on rational ruled surfaces] 85b:14018

- Kataylo, P. I. Rationality of orbit spaces of irreducible representations of the group  $SL_2$ . (Russian) 85g:14057  
 Knudsen, Finn F. The projectivity of the moduli space of stable curves. II. The stacks  $M_{g,n}$ . 85d:14038a

The projectivity of the moduli space of stable curves. III. The line bundles on  $M_{g,n}$ , and a proof of the projectivity of  $M_{g,n}$  in characteristic 0. 85d:14038b  
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- Maehara, Kazuhisa A finiteness property of varieties of general type. 85e:14015  
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Moduli of stable sheaves—generalities and the curves of jumping lines of vector bundles on  $P^2$ . 85b:14021

- Meseguer Gualta, José (with Solé Lucia, Ignacio) Faisceaux semi-stables de rang 2 sur  $P^3$ . (English summary) [Semistable sheaves of rank 2 on  $P^3$ ] 85i:14011  
 Moore, Ross (with Wardemann, Reiner)  $PGL(4)$  acts transitively on  $M(-1, 2)$ . 85g:14024

- Mori, Shigefumi (with Mukai, Shigeru) The uniruledness of the moduli space of curves of genus 11. 85b:14033

Morrison, Ian See Gieseker, David. 85m:14025

Mukai, Shigeru See Mori, Shigefumi. 85b:14033

- Okonek, Christian (with Spindler, Heinz) Reflexive Garben vom Rang  $r > 2$  auf  $P^n$ . [Reflexive sheaves of rank  $r > 2$  on  $P^n$ ] 85d:14029

(with Spindler, Heinz) Stabile reflexive Garben vom Rang 3 auf  $P^3$  mit kleinen Chernklassen. [Stable rank 3 reflexive sheaves on  $P^3$  with small Chern classes] 85f:14015

- Schaps, M. Versal determinantal deformations. 85i:14030

Schumacher, Georg Construction of the coarse moduli space of compact polarized Kähler manifolds with  $c_1 = 0$ . 85b:32033

- Seshadri, C. S. ★ Fibrés vectoriels sur les courbes algébriques. (French) [Vector bundles over algebraic curves] 85b:14023

Shepherd-Barron, N. I. Degenerations with numerically effective canonical divisor. 85f:14034

- Silhol, Robert Real abelian varieties and the theory of Comessatti. 85j:14077

Solé Lucia, Ignacio See Meseguer Gualta, José. 85i:14011

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- Tyurin, A. N. On the superpositions of mathematical instantons. 85d:14030

Viehweg, Eckart Weak positivity and the additivity of the Kodaira dimension for certain fibre spaces. 85b:14041

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14D22 Fine structure of moduli spaces

- Ballico, Edoardo Stable rationality for the variety of vector bundles over an algebraic curve. 85m:14017  
 Newstead, P. E. On the relations between characteristic classes of stable bundles of rank 2 over an algebraic curve. 85k:14005

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- Atiyah, M. F. (with Bott, Raoul) The Yang-Mills equations over Riemann surfaces. 85k:14006

Bott, Raoul See Atiyah, M. F. 85k:14006

- Brosius, J. Eric Rank-2 vector bundles on a ruled surface. II. 85i:14010

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- Knudsen, Finn F. The projectivity of the moduli space of stable curves. II. The stacks  $M_{g,n}$ . 85d:14038a

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- Seshadri, C. S. ★ Fibrés vectoriels sur les courbes algébriques. (French) [Vector bundles over algebraic curves] 85b:14023

14D25 Geometric invariants [See also 14L30.]

- Ballico, Edoardo (with Oliverio, P.) Stability of pencils of plane quartic curves. (Italian summary) 85m:14018  
 Fauntleroy, Amassa Stable base loci of representations of algebraic groups. 85f:14007  
 Gieseker, David Geometric invariant theory and applications to moduli problems. 85b:14014  
 Ishii, Shihoko Chow instability of certain projective varieties. 85f:14008  
 Kanevsky, D. On the algebro-geometric structure of the moduli space of completely reachable systems. 85g:14012  
 Oliverio, P. See Ballico, Edoardo. 85m:14018  
 Panyushev, D. I. Regular elements in spaces of linear representations of reductive algebraic groups. (Russian) 85h:14005  
 Popov, V. L. Syzygies in the theory of invariants. (Russian) 85g:14013  
 Ramanan, S. (with Ramanathan, A.) Some remarks on the instability flag. 85j:14017  
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- Atiyah, M. F. Angular momentum, convex polyhedra and algebraic geometry. 85a:50027  
 Bhoosle-Desale, U. N. Moduli of orthogonal and spin bundles over hyperelliptic curves. 85j:14024

Kraft, Hanspeter (with Procesi, Claudio) On the geometry of conjugacy classes in classical groups. 85b:14005

Miranda, Rick Projectively unstable elliptic surfaces. 85d:14053

Panyushev, D. I. Isomorphisms between orbit spaces. (Russian) 85f:14051

- Piene, Ragni A note on higher order dual varieties, with an application to scrolls. 85d:14056

Procesi, Claudio See Kraft, Hanspeter, 85b:14085

Rais, Mustapha Groupes linéaires compacts et fonctions  $C^\infty$  covariantes. (English summary) [Compact linear groups and covariant  $C^\infty$  functions] 85d:33038

## 14Exx Mappings and correspondences

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Khashin, S. I. Birational automorphisms of the Veronese double cone of dimension three. (Russian) 85i:14005

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Pluricanonical mappings of canonically polarized varieties. 85e:14016

Matsuaki, Kenji On pluricanonical maps for 3-folds of general type. 85m:14019

Pinkham, Henry C. Factorization of birational maps in dimension 3. 85g:14015

Sancho de Salas, Juan B. A vanishing theorem for birational morphisms. 85e:14017

Sasaki, Shōichi Birational geometry of birational pairs. 85g:14016a

Correction to: "Birational geometry of birational pairs" [Comment. Math. Univ.

St. Paul. 32 (1983), no. 1, 85-106]. 85g:14016b

Vitulli, Maria A. On grade and formal connectivity for weakly normal varieties. 85f:14009

#### secondary classifications (14E05)

Crauder, Bruce Threefold birational morphisms and degenerations without triple points. 85g:14039

Itaka, Shigeru Basic structure of algebraic varieties. 85j:14059

Kollár, J. (with Schreyer, Frank-Olaf) The moduli of curves is stably rational for  $g \leq 6$ . 85j:14044

Nishiguchi, Kenji Degeneration of surfaces with trivial canonical bundles. 85a:32027

Reid, Miles Decomposition of toric morphisms. 85e:14071

Schreyer, Frank-Olaf See Kollár, J., 85j:14044

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### 14E07 Structure of Cremona group and generalizations

Dolgachev, Igor V. Weyl groups and Cremona transformations. 85e:14018

Iakovikh, V. A. Generators and relations in a two-dimensional Cremona group. (Russian) 85e:14019

Yoshihara, Hisao Cremona transformations that are affine automorphisms. 85j:14019

#### secondary classifications (14E07)

Base, Hyman Automorphisms of polynomial rings. 85b:13009

A nontriangular action of  $G_a$  on  $A^3$ . 85j:14086

Furushima, Mikio Finite groups of polynomial automorphisms in  $C^n$ . 85g:32049

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Clemens, Herbert On the surjectivity of Abel-Jacobi mappings. 85b:14061

### 14E15 Global theory of singularities, resolution [See also 14B05, 32C45.]

Abhyankar, Shreeram S. Desingularization of plane curves. 85d:14024

Adkins, William A. Weak normality and Lipschitz saturation for ordinary singularities. 85j:14020

Fine, Jonathan Some essential valuations in the resolution of singularities. 85a:14011

Givental', A. B. The maximum number of singular points on a projective hypersurface. (Russian) 85e:14020

Oda, Tadao Hironaka group schemes and resolution of singularities. 85m:14020

Hironaka's additive group scheme. II. 85i:14006

Piedra Sánchez, Ramón Structure of stationary paths of algebroid hypersurfaces in dimension 4. (Spanish. English summary) (See 85i:00012)

Romo Santos, Concepción The number of formal quadratic transformations needed to lower the multiplicity of an algebroid hypersurface defined on a field of arbitrary characteristic. (Spanish. English summary) (See 85g:00026)

Sánchez-Giralda, T. Problems of finiteness and stationary paths in the theory of singularities of embedded algebroid surfaces. (Spanish. English summary) (See 85g:00026)

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Gläser, Michael \*Untersuchung einiger singulärer Hyperflächen des vier- und fünfdimensionalen projektiven Raumes. (German) [Investigation of some singular hypersurfaces of four- and five-dimensional projective space] 85b:14053

Greco, Silvio On algebraic varieties containing a given curve of projective space. (Italian) 85j:14009

Griffith, G. J. The "Coxeter curves",  $x^{2/p} + y^{2/p} + z^{2/p} = 0$  for odd values of  $p$ . 85e:14036

Lakshmibai, V. (with Seshadri, C. S.) Singular locus of a Schubert variety. 85j:14095

Pinkham, Henry C. Automorphisms of cusps and Inoue-Hirzebruch surfaces. 85m:32024

Sabbah, C. Morphismes analytiques stratifiés sans éclatement et cycles évanescents. [Stratified analytic morphisms without blowing-up and vanishing cycles] 85j:32017

Le type topologique éclaté d'une application analytique. [The blown-up topological type of an analytic map] 85g:58021

Seshadri, C. S. See Lakshmibai, V., 85j:14095

Singh, Balwant Maximally differential prime ideals in a complete local ring. 85f:13004

Permissibility of a maximally differential prime ideal. 85f:13005

Umesu, Yumiko Quartic surfaces of elliptic ruled type. 85e:14024

### 14E20 Coverings, fundamental group

Craighe, Pier Carlo Contributions of the theory of multiple points of linear series to the study of entire morphisms of the plane  $A^2$  with constant Jacobian. (Italian. English summary) 85m:14022

Crew, Richard M. Etale  $p$ -covers in characteristic  $p$ . 85f:14011

Druškowski, Ludwik M. An effective approach to Keller's Jacobian conjecture. 85b:14015a

Ekedahl, Torsten Sur le groupe fondamental d'une variété unirrationnelle. (English summary) [On the fundamental group of a unirational variety] 85f:14010

Kohno, Toshitake Differential forms and the fundamental group of the complement of hypersurfaces. 85i:14007

An algebraic computation of the Alexander polynomial of a plane algebraic curve. 85i:14008

Miyazaki, Masayoshi (with Russell, Peter) Purely inseparable coverings of exponent one of the affine plane. 85g:14018

Nakajima, Shōichi On Galois module structure of the cohomology groups of an algebraic variety. 85j:14021

Oka, Mutsuo On the boundary obstructions to the Jacobian problem. 85m:14023

Russek, Kamil A geometric approach to Keller's Jacobian conjecture. 85b:14015b

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Base, Hyman The Jacobian conjecture. 85j:13011

Brylinski, Jean-Luc Théorie du corps de classes de Kato et revêtements abéliens de surfaces. (English summary) [Kato's class field theory and abelian coverings of surfaces] 85f:11088

Cao, Hual Dong See Xu, Sen Lin; et al., (Not in MR)

Ganong, Richard (with Russell, Peter) Derivations with only divisorial singularities on rational and ruled surfaces. 85d:14052

Imayoshi, Yōichi Generalizations of de Franchis theorem. 85d:32051

Kato, Kazuya Class field theory and algebraic  $K$ -theory. 85f:11089

Residue homomorphisms in Milnor  $K$ -theory. 85g:11113

Letitia, M. A simple solution of the Jacobian problem in the quadratic case. 85b:13023

Oda, Susumu (with Yoshida, Ken-ichi) A short proof of the Jacobian conjecture in case of degree  $\leq 2$ . 85b:13011

Russell, Peter See Ganong, Richard, 85d:14052

Shabat, G. B. Local reconstruction of complex algebraic surfaces from universal coverings. (Russian) 85b:32054

Wang, Ze Ke See Xu, Sen Lin; et al., (Not in MR)

Xu, Sen Lin (with Wang, Ze Ke; Cao, Hual Dong) Isolated points of algebraic varieties. (Chinese) (Not in MR)

Yoshida, Ken-ichi See Oda, Susumu, 85b:13011

### 14E22 Ramification problems [See also 11S15.]

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Brown, William C. A note on higher derivations and ordinary points of curves. 85k:13007

Dale, Magnus Terracini's lemma and the secant variety of a curve. 85g:14066

Gaffney, Terence Multiple points and associated ramification loci. 85g:14005

Kato, Mitsuyoshi On the existence of finite principal uniformizations of  $CP^2$  along weighted line configurations. 85b:32018

Katz, Nicholas M. Wild ramification and some problems of "independence of  $l$ ". 85f:14021

Verra, Alessandro On Enriques surface as a fourfold cover of  $P^2$ . 85b:14051

### 14E25 Imbeddings

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Ionescu, Paltin Embedded projective varieties of small invariants. 85m:14024

Nori, Madhav V. The fundamental group-scheme. 85g:14019

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Ballico, Edoardo (with Ellia, Philippe) On postulation of curves: embeddings by complete linear series. 85m:14047

Bulum, Alexandru Embeddings of surfaces fibered over curves into ruled varieties. (Romanian. English summary) 85e:14052

Ellia, Philippe See Ballico, Edoardo, 85m:14047

Florentini, Mario (with Lascu, Alexandru T.) A criterion for quasicomplete intersections and related embedding questions. (Italian summary) 85b:14066

Lascu, Alexandru T. See Florentini, Mario, 85b:14066

Luna, D. (with Vust, Th.) Plongements d'espaces homogènes. [Embeddings of homogeneous spaces] 85a:14035

Robson, Robert Embedding semi-algebraic spaces. 85e:14017

Vust, Th. See Luna, D., 85a:14035



## 14E30 Minimal models

secondary classifications (14E30)

- Itaka, Shigeru On irreducible plane curves. 85g:14017  
 Stagnaro, Edoardo Constructing Enriques surfaces from quintics in  $P^3_k$ . 85b:14050  
 Wilson, P. M. H. Base curves of multicanonical systems on threefolds. 85j:14022

14E35 Results in dimension  $\leq 3$ 

- Benveniste, Xavier Sur l'anneau canonique de certaines variétés de dimension 3. [On the canonical ring of certain 3-folds] 85g:14020  
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Bindschadler, David See Brenton, Lawrence; et al., 85g:14047

Brenton, Lawrence (with Bindschadler, David; Drucker, Daniel; Prins, Geert C. E.) On global extensions of Dynkin diagrams and singular surfaces of the topological type of  $P^2$ . 85g:14047

Drucker, Daniel See Brenton, Lawrence; et al., 85g:14047

McCrory, Clint On the topology of Deligne's weight filtration. 85f:14020

Prins, Geert C. E. See Brenton, Lawrence; et al., 85g:14047

Schwartz, Jacob T. (with Sharir, Micha) On the "piano movers" problem. II. General techniques for computing topological properties of real algebraic manifolds. 85h:52014

Sharir, Micha See Schwartz, Jacob T., 85h:52014

Silhol, Robert Real algebraic surfaces with rational or elliptic fiberings. 85g:14049

Viro, O. Ya. Planar real curves of degree 7 and 8: new prohibitions. (Russian) 85e:14044

## 14F99 None of the above, but in this section

## secondary classifications (14F99)

Borel, A.  $L^2$ -cohomology and intersection cohomology of certain arithmetic varieties. 85e:32035

Grivel, Pierre-Paul Fibrés algébriques de fibre donnée. (English summary) [Algebraic fibre bundles with given fibre] (See 85d:55001)

Navarro Aznar, Vicente On the hard Lefschetz theorem in intersection cohomology. (Spanish. English summary) 85j:32049

## 14Gxx Special ground fields, arithmetic problems (For complex multiplication, see 11G15, 14K22. For automorphic and modular functions and forms, see also 11Fxx, 14K15.)

## 14G05 Rationality questions

Köhls, Yöichi Rational points as proper points over a finite field. 85a:14016

## secondary classifications (14G05)

Bertrand, D. Théorie de Kummer sur les groupes algébriques. [Kummer theory on algebraic groups] (See 85g:11009)

Birch, B. J. (with Stephens, N.) Heegner's construction of points on the curve  $y^2 = x^3 - 1728x^2$ . 85j:11062

Bloch, Spencer The proof of the Mordell conjecture. 85b:11049

Brenner, Andrew (with Cassels, J. W. S.) On the equation  $Y^2 = X(X^2 + p)$ . 85f:11017

Cassels, J. W. S. See Brenner, Andrew, 85f:11017

Colliot-Thélène, Jean-Louis (with Sansuc, Jean-Jacques) Quelques gammes sur les formes quadratiques. [An exercise on quadratic forms] 85g:11030

Kauchikas, A. P. Double equations in the work of Diophantus and of P. Fermat. (Russian) 85g:01008b

Olson, Loren D. Mordell-Faltings' theorem. (Norwegian. English summary) 85j:11034

Poulakis, Dimitrios Points rationnels sur  $Q$  de la jacobienne de la courbe modulaire  $X_0(3^4)$ . (English summary) [Rational points over  $Q$  of the Jacobian of the modular curve  $X_0(3^4)$ ] 85j:11065

Sansuc, Jean-Jacques See Colliot-Thélène, Jean-Louis, 85g:11030

Schwartz, Charles F. A Mordell-Weil group of rank 8, and a subgroup of finite index. 85j:14070

Slavutin, E. I. Geometric interpretation of the methods for solving "double equations" in Diophantus of Alexandria's *Arithmetica*. (Russian) 85g:01008a

Stephens, N. See Birch, B. J., 85j:11062

Yasumoto, Masahiro Nonstandard arithmetic of function fields over  $H$ -convex subfields of  $^*Q$ . 85g:11028

## 14G10 Zeta functions and related questions [See also 11R42, 11S40.]

Drinfel'd, V. G. See Viêtduc, S. G., 85b:14028

Kato, Goro C. (with Lubkin, Saul) Zeta matrices of elliptic curves. 85e:14029

Katz, Nicholas M. Wild ramification and some problems of "independence of  $l$ ". 85f:14021

Lubkin, Saul See Kato, Goro C., 85e:14029

Meuser, D. On the poles of a local zeta function for curves. 85i:14014

Serre, Jean-Pierre Sur le nombre des points rationnels d'une courbe algébrique sur un corps fini. (English summary) [On the number of rational points of an algebraic curve over a finite field] 85b:14027

Viêtduc, S. G. (with Drinfel'd, V. G.) The number of points of an algebraic curve. (Russian) 85b:14028

## secondary classifications (14G10)

Asai, Teruaki On the zeta functions of the varieties  $X(w)$  of the split classical groups and the unitary groups. 85a:20020

Birch, B. J. (with Stephens, N.) Heegner's construction of points on the curve  $y^2 = x^3 - 1728x^2$ . 85j:11062

Bloch, Spencer Algebraic cycles and values of  $L$ -functions. 85i:11052

Gross, Benedict (with Zagier, Don) Points de Heegner et dérivées de fonctions  $L$ . (English summary) [Heegner points and derivatives of  $L$ -functions] 85d:11062

Kato, Goro C. On the generators of the first homology with compact supports of the Weierstrass family in characteristic zero. 85e:14062

Kubert, Daniel S. (with Lichtenbaum, Stephen) Jacobi-sum Hecke characters and Gauss-sum identities. 85c:11108

Kubota, Tsumio Notes on metaplectic automorphic functions and zeta functions. 85g:11043

Leumou, Gérard Les constantes des équations fonctionnelles des fonctions  $L$  sur un corps global de caractéristique positive. (English summary) [The constants in the



- functional equations of  $L$ -functions over a global field of positive characteristic] 85j:11170
- Lichtenbaum, Stephen Zeta functions of varieties over finite fields at  $s = 1$ . 85j:14038<sup>\*</sup>  
Values of zeta-functions at nonnegative integers. (See 85i:11001)  
See also Kubert, Daniel S., 85c:11108
- Ohta, Masami On the zeta function of an abelian scheme over the Shimura curve. II. 85j:11088  
On the zeta function of an abelian scheme over the Shimura curve. 85j:11087
- Rosen, Michael I. Some remarks on the  $p$ -rank of an algebraic curve. 85b:14030
- Schneider, Peter Iwasawa  $L$ -functions of varieties over algebraic number fields. A first approach. 85d:11063
- Stephens, N. See Birch, B. J., 85j:11063
- Tunnell, J. B. A classical Diophantine problem and modular forms of weight  $3/2$ . 85d:11046
- Washio, T.  $L$ -functions of algebraic function fields defined by  $y^2 = x^5 + a$  over  $\text{GF}(p)$ . 85b:11050
- Zagier, Don See Gross, Benedict, 85d:11063

## 14G13 Weil-Tate conjectures [See also 14Cxx.]

- Hirachfeld, J. W. P. The Weil conjectures in finite geometry. 85j:14037
- Koblitz, Neal The number of points on certain families of hypersurfaces over finite fields. 85d:14034
- Lichtenbaum, Stephen Zeta functions of varieties over finite fields at  $s = 1$ . 85j:14038
- Moreno, Carlos J. The method of Hadamard and de la Vallée-Poussin (according to Pierre Deligne). 85a:14017
- Murty, V. Kumar Algebraic cycles on abelian varieties. 85b:14029
- Nygaard, Niels O. The Tate conjecture for ordinary  $K3$  surfaces over finite fields. 85b:14012

## secondary classifications (14G13)

- Faltings, Gerd Arakelov's theorem for abelian varieties. 85m:14061
- Katz, Nicholas M. Wild ramification and some problems of "independence of  $\Gamma$ ". 85f:14021
- Nygaard, Niels O. The Torelli theorem for ordinary  $K3$  surfaces over finite fields. 85d:14054

## 14G15 Finite ground fields

- Rosen, Michael I. Some remarks on the  $p$ -rank of an algebraic curve. 85b:14030
- Ughi, E. On the number of points of elliptic curves over a finite field and a problem of B. Segre. 85c:14030

## secondary classifications (14G15)

- Drinfel'd, V. G. See Vîdăduț, S. G., 85b:14028
- Furukawa, Yoshihiro On the liftings of the Frobenius correspondences of algebraic curves of genus two over finite fields. 85c:14022
- Guerra, L. (with Ughi, E.) On a conjecture of S. Ilka. 85b:51012
- Hirachfeld, J. W. P. The Weil conjectures in finite geometry. 85j:14037
- Ihara, Yasutaka On unramified extensions of function fields over finite fields. 85c:11116
- Kôshiba, Yôichi Rational points as proper points over a finite field. 85a:14016
- Lichtenbaum, Stephen Zeta functions of varieties over finite fields at  $s = 1$ . 85j:14038
- Nakajima, Shôichi On generalized Hasse-Witt invariants of an algebraic curve. 85b:14015
- Nakamura, Tetsuo On two-dimensional formal groups over the prime field of characteristic  $p > 0$ . 85c:14068
- Nygaard, Niels O. The Tate conjecture for ordinary  $K3$  surfaces over finite fields. 85b:14012
- Serre, Jean-Pierre Sur le nombre des points rationnels d'une courbe algébrique sur un corps fini. (English summary) [On the number of rational points of an algebraic curve over a finite field] 85b:14027
- Stepanov, S. A. Estimation of rational trigonometric sums along a curve. (Russian) 85m:11050
- Tankov, S. G. Cycles of abelian varieties of prime dimension over finite and number fields. (Russian) 85b:14060
- Tafasman, M. A. (with Vlăduț, S. G.; Zink, Th.) Modular curves, Shimura curves, and Goppa codes, better than Varshamov-Gilbert bound. 85i:11108
- Ughi, E. See Guerra, L., 85b:51012
- Vlăduț, S. G. See Tafasman, M. A.; et al., 85i:11108
- Vîdăduț, S. G. (with Drinfel'd, V. G.) The number of points of an algebraic curve. (Russian) 85b:14028
- Zink, Th. See Tafasman, M. A.; et al., 85i:11108

14G20  $p$ -adic ground fields (local fields)

- Bouch, Siegfried On  $p$ -adic uniformization. 85m:14035a  
On the reduction of abelian varieties. 85m:14035b
- Fresnel, J. Localisation formelle et groupe de Picard. [Formal localization and Picard groups] 85b:14013
- Gerritsen, Lothar  $p$ -adic Teichmüller space and Siegel halfspace. 85m:14036a  
 $p$ -adic Siegel halfspace. 85m:14036b
- Herrlich, Frank  $p$ -adic Teichmüller space for genus 2. 85j:14039
- Robba, P. Cohomologies de Dwork. I. [Dwork cohomology. I] (See 85h:11001a)
- Van Steen, Guido Decomposition of non-Archimedean analytic tori. 85j:14040

## secondary classifications (14G20)

- Baldassarri, F. Witt vectors,  $p$ -adic differential equations and descent theory. (See 85g:14004)
- Basarab, Șerban A. Some remarks concerning the torsion points of elliptic curves. 85b:14058

- Brylinski, Jean-Luc (Co-)homologie d'intersection et faisceaux pervers. [Intersection (co)homology and perverse sheaves] 85i:32016a
- Candilera, Maurizio (with Cristante, Valentino) Bi-extensions associated to divisors on abelian varieties and theta functions. 85j:14063
- Christol, G. Solutions algébriques des équations différentielles  $p$ -adiques. [Algebraic solutions of  $p$ -adic differential equations] 85b:12013
- Cristante, Valentino See Candilera, Maurizio, 85j:14063
- Dwork, Bernard M. On the Boyarsky principle. 85b:11111  
Puiseux expansions. 85i:11099  
Differential equations which come from geometry. 85i:12011  
Singular residue classes which are ordinary for  $F(a, b, c, \lambda)$ . 85k:12004
- Fontaine, Jean-Marc (with Laffaille, Guy) Construction de représentations  $p$ -adiques. [Construction of  $p$ -adic representations] 85c:14028
- Koblitz, Neal The number of points on certain families of hypersurfaces over finite fields. 85d:14034
- Laffaille, Guy See Fontaine, Jean-Marc, 85c:14028
- Littkebohmert, Werner Families of Mumford curves. 85j:14045
- Ogg, A. P. Real points on Shimura curves. 85m:11034
- Prestel, Alexander (with Roquette, Peter)  $\star$  Formally  $p$ -adic fields. 85m:11090
- Roquette, Peter See Prestel, Alexander, 85m:11090
- Silverman, Joseph H. The Néron fiber of abelian varieties with potential good reduction. 85b:14059
- Springer, T. A. Quelques applications de la cohomologie d'intersection. [Some applications of intersection cohomology] 85i:32016b
- Vostokov, S. V. On the theory of class fields of a multidimensional local field. (Russian) 85i:11053
- Yamazaki, Tadaaki Integrals defining singular series. 85f:11090

## 14G25 Global ground fields

- Kodama, Tetsuo On the rank of Hasse-Witt matrix. 85m:14037
- Mestre, J.-P. Courbes elliptiques et formules explicites. [Elliptic curves and explicit formulas] 85g:14025
- Strooker, R. J. Reduction of elliptic curves over imaginary quadratic number fields. 85c:14031
- Zarkhin, Yu. G. Weights of simple Lie algebras in the cohomology of algebraic varieties. (Russian) 85k:14012
- Zimmer, Horst G. Correction and remarks concerning: "Quasifunctions on elliptic curves over local fields" [J. Reine Angew. Math. 307/308 (1979), 221-246; MR 80g:14024]. 85f:14022

## secondary classifications (14G25)

- Bernardi, D. (with Goldstein, Catherine; Stephens, N.) Notes  $p$ -adiques sur les courbes elliptiques. [ $p$ -adic notes on elliptic curves] 85k:11029
- Carayol, Henri Sur les représentations  $l$ -adiques attachées aux formes modulaires de Hilbert. (English summary) [On the  $l$ -adic representations corresponding to Hilbert modular forms] 85c:11039
- Colliot-Thélène, Jean-Louis See Sansuc, Jean-Jacques, 85d:14014
- Cremona, J. E. Hyperbolic tessellations, modular symbols, and elliptic curves over complex quadratic fields. 85j:11063
- Dem'yanenko, V. A. Orders of torsion points of elliptic curves. (Russian) 85k:11028  
On Abel relations. (Russian) 85m:14060
- Faltings, Gerd Endlichkeitsätze für abelsche Varietäten über Zahlkörpern. [Finiteness theorems for abelian varieties over number fields] 85g:11026a  
Erratum: "Finiteness theorems for abelian varieties over number fields". (German) 85g:11026b  
Die Vermutungen von Tate und Mordell. [The conjectures of Tate and Mordell] 85i:11020
- Goldstein, Catherine See Bernardi, D.; et al., 85k:11029
- Greenberg, Ralph On the Birch and Swinnerton-Dyer conjecture. 85c:11052
- Harris, Michael Arithmetic vector bundles on Shimura varieties. (See 85g:11003)
- Kramer, Kenneth A family of semistable elliptic curves with large Tate-Shafarevich groups. 85d:14059
- Lang, Serge  $\star$  Fundamentals of Diophantine geometry. 85j:11005  
Conjectured Diophantine estimates on elliptic curves. 85d:11024
- Laska, Michael  $\star$  Elliptic curves over number fields with prescribed reduction type. 85j:11064
- Laurent, Michel Minoration de la hauteur de Néron-Tate. [Lower bounds of the Néron-Tate height] 85c:11048
- Masser, D. W. (with Wüstholz, G.) Fields of large transcendence degree generated by values of elliptic functions. 85g:11060
- Matthews, C. R. (with Vaserstein, Leonid; Weisfeiler, Boris) Congruence properties of Zariski-dense subgroups. I. 85d:20040
- Mazur, Barry C. (with Tate, John) Canonical height pairings via biextensions. 85j:14081
- Momose, Fumiyuki Galois action on some ideal section points of the abelian variety associated with a modular form and its application. 85d:11050
- Murty, V. Kumar Algebraic cycles on abelian varieties. 85b:14029
- Néron, A. Fonctions  $\theta$ - $p$ -adiques et hauteurs  $p$ -adiques. [ $p$ -adic theta functions and  $p$ -adic heights] 85g:14054
- Nishioka, Kumiko The 2-adic representations attached to elliptic curves defined over  $\mathbb{Q}$  whose points of order 2 are all  $\mathbb{Q}$ -rational. 85b:11045
- Oesterlé, J. Construction de hauteurs archimédiennes et  $p$ -adiques suivant la méthode de Bloch. [Construction of Archimedean and  $p$ -adic heights following the method of Bloch] 85g:14055
- Pinch, R. G. E. Elliptic curves with good reduction away from 2. 85j:14080
- Poulakis, Dimitrios Points rationnels sur  $\mathbb{Q}$  de la jacobienne de la courbe modulaire  $X_0(3^4)$ . (English summary) [Rational points over  $\mathbb{Q}$  of the Jacobian of the modular curve  $X_0(3^4)$ ] 85j:11065

Sansuc, Jean-Jacques À propos d'une conjecture arithmétique sur le groupe de Chow d'une surface rationnelle. [On an arithmetic conjecture about the Chow group of a rational surface] **85d:14014**

Satgé, P. Une généralisation du calcul de Selmer. [A generalization of Selmer's calculation] **85g:11046**

Stephens, N. See Bernardi, D.; et al. **85k:11029**

Stienstra, Jan On the formal completion of the Chow group  $CH^2(X)$  for a smooth projective surface in characteristic 0. **85m:14010**

Tate, John See Mazur, Barry C. **85j:14081**

Thomas, Emery (with Vasquez, A. T.) A family of elliptic curves and cyclic cubic field extensions. **85f:11019**

Tafasman, M. A. Arithmetic of singular del Pezzo surfaces. (Russian) **85c:14023**

Vaserstein, Leonid See Matthews, C. R.; et al. **85d:20040**

Vasquez, A. T. See Thomas, Emery. **85f:11019**

Washio, T. On class numbers of algebraic function fields defined by  $y^2 = x^{2g+1} + ax$  with  $g = 2$  and  $3$ . **85j:11105**

Weisfeller, Boris See Matthews, C. R.; et al. **85d:20040**

Wüthrich, G. See Masser, D. W. **85g:11060**

**14G30** Real ground fields [See also 32C05. Must also be assigned at least one other number referring to the specific type of problem considered.]

Alonso, M. E. Real proper morphisms. **85m:14038**

Andradas, C. (with Gamboa, J. M.) On projections of real algebraic varieties. **85i:14015**

Benedetti, R. (with Tognoli, A.) Remarks and counterexamples in the theory of real algebraic vector bundles and cycles. **85a:14018**

Delfs, Hans (with Knebusch, Manfred) Separation, retractions and homotopy extension in semi-algebraic spaces. **85i:14016**

Dietel, Gerhard Wittringe singulärer reeller Kurven. I, II. [Witt rings of singular real curves. I, II] **85c:14032**

Gamboa, J. M. A characterization of rational and elliptic real algebraic curves in terms of their space of orderings. **85m:14039**

See also Andradas, C. **85i:14015**

Knebusch, Manfred See Delfs, Hans. **85i:14016**

Robson, Robert Embedding semi-algebraic spaces. **85c:14017**

Schwartz, Niels Der Raum der Zusammenhangskomponenten einer reellen Varietät. [The space of connected components of a real variety] **85g:14026**

Tognoli, A. Une remarque sur les approximations en géométrie algébrique réelle. (English summary) [A remark on approximations in real algebraic geometry] **85b:14031**

See also Benedetti, R. **85a:14018**

secondary classifications (14G30)

Alling, Norman L. The  $\xi$ -topology on  $\eta_\xi$ -classes with applications to real algebraic geometry. **85c:12009**

Alonso, M. Emilia (with Gamboa, J. M.; Ruiz, Jesús M.) Ordres sur les surfaces réelles. (English summary) [Orderings on real surfaces] **85b:32009**

Andradas, C. (with Gamboa, J. M.) A note on projections of real algebraic varieties. **85m:12001**

Basarab, Șerban A. A Nullstellensatz über ordered fields. **85i:12014**

Definite functions on algebraic varieties over ordered fields. **85k:12006**

Benedetti, R. On certain topological spaces admitting strongly coherent real algebraic structure. **85a:57015**

Bröcker, Ludwig Positivbereiche in kommutativen Ringen. [Positivity domains in commutative rings] **85c:13004**

Byrnes, C. Control theory, inverse spectral problems, and real algebraic geometry. **85c:93044**

Chevalier, Benoît Sur une manière de construire des courbes réelles dans  $P^2(R)$ . [On a method of constructing real curves in  $P^2(R)$ ] **85d:14044**

van den Dries, L. Analytic Hardy fields and exponential curves in the real plane. **85b:12002**

Fiedler, Thomas New congruences in the topology of real plane algebraic curves. (Russian) **85b:14039**

Gamboa, J. M. See Alonso, M. Emilia; et al. **85b:32009** and Andradas, C. **85m:12001**

Gianni, Patrizia On the Arnold-Wilson inequalities for real algebraic curves. (Italian. English summary) **85c:14027**

Grosser, Siegfried K. (with Herfort, W.) An invariance property of algebraic curves in  $P^2(R)$ . **85g:14037**

Herfort, W. See Grosser, Siegfried K. **85g:14037**

Kharlamov, V. M. On the classification of nonsingular surfaces of degree 4 in  $RP^3$  with respect to rigid isotopies. (Russian) **85m:14034**

King, Henry Churchill The topology of real algebraic sets. **85i:14013**

Krasnov, V. A. An Albanese mapping for real algebraic varieties. (Russian) **85d:14075**

Harnack-Thom inequalities for mappings of real algebraic varieties. (Russian) **85d:14076**

Marinari, Maria Grazia (with Odetti, Francesco; Raimondo, Mario) Affine curves over an algebraically nonclosed field. **85f:14032**

Mora, Fulvio (with Raimondo, Mario) On Noetherianness of Nash rings. **85g:13005**

Odetti, Francesco See Marinari, Maria Grazia; et al. **85f:14032**

Raimondo, Mario See Marinari, Maria Grazia; et al. **85f:14032** and Mora, Fulvio. **85g:13005**

Roggero, Margherita Linear systems and the divisor class group of a real variety. (Italian. English summary) **85j:14094**

Ruiz, Jesús M. See Alonso, M. Emilia; et al. **85b:32009**

Shcherbak, O. P. Projectively dual space curves and Legendre singularities. (Russian. English and Georgian summaries) **85g:58022**

Silhol, Robert Real abelian varieties and the theory of Comessatti. **85j:14077**

Diviseurs sur les variétés algébriques réelles. (Italian summary) [Divisors on real algebraic varieties] **85d:14012**

Real algebraic surfaces with rational or elliptic fibrings. **85g:14040**

Viro, O. Ya. Planar real curves of degree 7 and 8: new prohibitions. (Russian) **85c:14044**

**14G99** None of the above, but in this section

secondary classifications (14G99)

Bliznyakov, N. M. Estimates of the topological index of zeros of polynomial mappings. (Russian) **85b:58069**

Borges Neto, H. An invariant of certain fields of genus 2. **85c:11114**

## 14Hxx Curves

secondary classifications (14Hxx)

(Artamkin, I. V.) See Clemens, C. Herbert. **85m:14001**

Chen, Zhi Hua See Wu, Hung Hai; et al. **85g:30075**

Clemens, C. Herbert ★ Мозаика теории комплексных кривых. [A mosaic of complex curve theory] **85m:14001**

Lü, Yi Nian See Wu, Hung Hai; et al. **85g:30075**

(Tyurin, A. N.) See Clemens, C. Herbert. **85m:14001**

Wu, Hung Hai (with Lü, Yi Nian; Chen, Zhi Hua) ★ Jin Liman qumian yinlun. (Chinese) [Introduction to compact Riemann surfaces] **85g:30075**

**14H05** Algebraic functions [See also 14K20, 32G20.]

Cohn, P. M. Puiseux's theorem revisited. **85d:14035**

Kato, Takao On the isomorphism theorem of the meromorphic function fields. **85j:14041**

Stichtenoth, Henning Die Ungleichung von Castelnuovo. [Castelnuovo's inequality] **85d:14036**

Zur Realisierbarkeit endlicher Gruppen als Automorphismengruppen algebraischer Funktionenkörper. [On the realizability of finite groups as automorphism groups of algebraic function fields] **85m:14046**

secondary classifications (14H05)

Çavuş, A. A note on coverings of Riemann surfaces and meromorphic functions fields. (Turkish summary) **85f:30085**

Deveney, James K. Automorphism groups of ruled function fields and a problem of Zariski. **85f:12010**

D'Mello, Joseph G. (with Madan, Manohar L.) Algebraic function fields with solvable automorphism group in characteristic  $p$ . **85f:14025**

Ishii, Noburo Construction of generators of modular function fields. **85k:11021**

Kodama, Tetsuo On the rank of Hasse-Witt matrix. **85m:14037**

Lebow, A. (with Schreiber, Morris) On the regular representation of a function field. **85c:12005**

Lovett, Jane Tiffany On valuations with a product formula of a function field in several variables. **85a:12009**

Madan, Manohar L. See D'Mello, Joseph G. **85f:14025**

Madden, Daniel J. (with Valentini, Robert C.) The group of automorphisms of algebraic function fields. **85i:11096**

Richter, Bernd Über einen Satz von Deuring-Safarevič-Madan. [On a theorem of Deuring-Safarevič-Madan] **85g:11109**

Schreiber, Morris See Lebow, A. **85c:12005**

Valentini, Robert C. See Madden, Daniel J. **85i:11096**

## 14H10 Families, moduli (algebraic)

Ballico, Edoardo (with Ellia, Philippe) On degeneration of projective curves. **85c:14033**

Catanesse, Fabrizio Curves of low genus. (Italian) **85m:14041**

On the rationality of certain moduli spaces related to curves of genus 4. **85b:14032**

Chang, Mei Chu (with Ran, Ziv) Unirationality of the moduli spaces of curves of genus 11, 13 (and 12). **85m:14042**

Diaz, Steven A bound on the dimensions of complete subvarieties of  $M_g$ . **85j:14042**

Eisenbud, D. Rational curves with cusps. **85d:14037**

(with Harris, Joseph Daniel) Limit linear series, the irrationality of  $M_g$ , and other applications. **85h:14014**

Ellia, Philippe See Ballico, Edoardo. **85c:14033**

Fulton, William On nodal curves. **85c:14018**

Harris, Joseph Daniel Families of smooth curves. **85j:14043**

See also Eisenbud, D. **85h:14014**

Hartshorne, Robin Une courbe irréductible non lissifiable dans  $P^3$ . (English summary) [An irreducible nonsmoothable curve in  $P^3$ ] **85k:14013**

Knudsen, Finn F. The projectivity of the moduli space of stable curves. II. The stacks  $M_{g,n}$ . **85d:14038a**

The projectivity of the moduli space of stable curves. III. The line bundles on  $M_{g,n}$ , and a proof of the projectivity of  $\bar{M}_{g,n}$  in characteristic 0. **85d:14038b**

Kollár, J. (with Schreyer, Frank-Olaf) The moduli of curves is stably rational for  $g \leq 6$ . **85j:14044**

Lønsted, Knud The singular points on the moduli spaces for smooth curves. **85g:14027**

Lütkebohmert, Werner Families of Mumford curves. **85j:14045**

Mori, Shigefumi (with Mukai, Shigeru) The uniruledness of the moduli space of curves of genus 11. **85b:14033**

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Mumford, David Towards an enumerative geometry of the moduli space of curves. **85j:14046**

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- Wilson, P. M. H. On regular threefolds with  $\kappa = 0$ . 85g:14051

#### secondary classifications (14J30)

- Benveniste, Xavier Sur l'anneau canonique de certaines variétés de dimension 3. [On the canonical ring of certain 3-folds] 85g:14020
- Endryushka, S. Yu. The intermediate Jacobian of a three-dimensional fibration on a conic is a Prym variety. (Russian) 85i:14026
- van der Geer, Gerard Prym surfaces and a Siegel modular threefold. 85f:14039
- Letizia, M. The Abel-Jacobi mapping for the quartic threefold. 85g:14046
- Markushevich, D. G. Classification of algebraic varieties with the condition of termination of the adjunction process. (Russian) 85g:14042
- Matsuki, Kenji On pluricanonical maps for 3-folds of general type. 85m:14019
- Morrison, David R. (with Stevens, Glenn) Terminal quotient singularities in dimensions three and four. 85a:14004
- Stevens, Glenn See Morrison, David R., 85a:14004
- Ueno, Kenji Degenerations of elliptic surfaces and certain non-Kähler manifolds. 85g:14044
- Yamada, Asahiko Small deformations of certain compact class  $L$  manifolds. 85j:32035

#### 14J35 Special 4-folds [See also 14E05.]

- Fania, Maria Lucia Extension of modifications of ample divisors on fourfolds. 85k:14021
- Lewis, James D. The Hodge conjecture for a certain class of fourfolds. 85m:14059

#### secondary classifications (14J35)

- Gläser, Michael ★ Untersuchung einiger singulärer Hyperflächen des vier- und fünfdimensionalen projektiven Raumes. (German) [Investigation of some singular hypersurfaces of four- and five-dimensional projective space] 85b:14053

- Morrison, David R. (with Stevens, Glenn) Terminal quotient singularities in dimensions three and four. **85a:14004**  
 Stevens, Glenn See Morrison, David R., **85a:14004**

#### 14J40 Special $n$ -folds

- Fujita, Takao On the structure of polarized manifolds with total deficiency one. III. **85e:14061**  
 Lange, Herbert Higher secant varieties of curves and the theorem of Nagata on ruled surfaces. **85f:14043**  
 Lanteri, Antonio (with Palleschi, Marino) Some characterizations of projective bundles and projective spaces. **85b:14056**  
 Palleschi, Marino See Lanteri, Antonio, **85b:14056**  
 Piccollella, Lia Fioravanti Doubly striated varieties. (Italian. English summary) **85a:14028**  
 Piene, Ragni A note on higher order dual varieties, with an application to scrolls. **85d:14058**

#### secondary classifications (14J40)

- Bădescu, Lucian Hyperplane sections and deformations. **85b:14004**  
 Craighero, Pier Carlo Points of irreducible cubic hypersurfaces of  $P_k^n$  as set-theoretic complete intersections. (Italian. English summary) **85d:14070**  
 Fujita, Takao Rational retractions onto ample divisors. **85d:14019**  
 Horowitz, Tony Varieties of low  $\Delta$ -genus. **85d:14022**  
 Ionescu, Paltin Embedded projective varieties of small invariants. **85m:14024**  
 Khashin, S. I. Birational automorphisms of the Veronese double cone of dimension three. (Russian) **85i:14005**  
 Klyachko, A. A. See Voskresenskii, V. E., **85k:14024**  
 Lange, Herbert Zur Klassifikation von Regelmännigfaltigkeiten. [On the classification of ruled manifolds] **85b:14019**  
 Lanteri, Antonio (with Palleschi, Marino) Characterizing projective bundles by means of ample divisors. **85e:14047**  
 Mumford, David On the Kodaira dimension of the Siegel modular variety. **85d:14061**  
 Palleschi, Marino See Lanteri, Antonio, **85e:14047**  
 Voskresenskii, V. E. (with Klyachko, A. A.) Toric Fano varieties and systems of roots. (Russian) **85k:14024**

#### 14J50 Automorphisms of surfaces and higher-dimensional special varieties

- Barth, Wolf Paul (with Peters, Chris) Automorphisms of Enriques surfaces. **85g:14052**  
 Dolgachev, Igor V. On automorphisms of Enriques surfaces. **85j:14076**  
 Ignatenko, V. F. Algebraic surfaces with symmetry group that of the polyhedron  $4_{21}$ . (Russian) **85g:14053**  
 Miranda, Rick Nonclassical Godeaux surfaces in characteristic five. **85d:14057**  
 Peters, Chris See Barth, Wolf Paul, **85g:14052**  
 Tregub, S. L. Birational automorphisms of a three-dimensional cubic. (Russian) **85b:14057**  
 Usui, Sampel Addendum to: "Period map of surfaces with  $p_g = 1$ ,  $c_1^2 = 2$  and  $\pi_1 = \mathbb{Z}/2\mathbb{Z}$ ". **85k:14018b**

#### secondary classifications (14J50)

- Letizia, M. Quotients by complex conjugation of nonsingular quadrics and cubics in  $P_C^3$  defined over  $R$ . **85f:14044**  
 Morrison, Ian (with Persson, Ulf) The group of sections on a rational elliptic surface. **85e:14054**  
 Persson, Ulf See Morrison, Ian, **85e:14054**

#### 14J99 None of the above, but in this section

- Letizia, M. Quotients by complex conjugation of nonsingular quadrics and cubics in  $P_C^3$  defined over  $R$ . **85f:14044**

#### secondary classifications (14J99)

- Alonso, M. Emilia (with Gamboa, J. M.; Ruiz, Jesús M.) Ordres sur les surfaces réelles. (English summary) [Orderings on real surfaces] **85b:32009**  
 Gamboa, J. M. See Alonso, M. Emilia; et al., **85b:32009**  
 Krasnov, V. A. Harnack-Thom inequalities for mappings of real algebraic varieties. (Russian) **85d:14076**  
 Ruiz, Jesús M. See Alonso, M. Emilia; et al., **85b:32009**

#### 14Kxx Abelian varieties and schemes

- Oda, Tadao Abelian varieties and related topics in algebraic geometry. **85d:14058**

#### 14K05 Algebraic theory

- Raynaud, Michel Sous-variétés d'une variété abélienne et points de torsion. [Subvarieties of an abelian variety and torsion points] **85k:14022**  
 Silhol, Robert Real abelian varieties and the theory of Comessatti. **85j:14077**  
 Treibich Kohn, A. Construction de matrices  $S$ . Appendice. [Construction of  $S$ -matrices. Appendix] **85j:14079**  
 See also Verdier, J.-L. **85j:14078**  
 Verdier, J.-L. (with Treibich Kohn, A.) Construction de matrices  $S$ . [Construction of  $S$ -matrices] **85j:14078**

#### secondary classifications (14K05)

- Lewin-Ménégaux, Renée Modèles minimaux de toseurs. (English summary) [Minimal models for torsors] **85d:14064**

#### 14K07 Elliptic curves, one-dimensional theory

- Basarab, Șerban A. Some remarks concerning the torsion points of elliptic curves. **85b:14058**  
 Dem'yanenko, V. A. On Abel relations. (Russian) **85m:14060**  
 Kramer, Kenneth A family of semistable elliptic curves with large Tate-Shafarevich groups. **85d:14059**  
 Pinch, R. G. E. Elliptic curves with good reduction away from 2. **85j:14060**  
 Well, André Euler and the Jacobians of elliptic curves. **85d:14060**

#### secondary classifications (14K07)

- Brenner, Andrew (with Tsanakis, Nicholas) Integer points on  $y^2 = x^3 - 7x + 10$ . **85c:11028**  
 Chowla, S. (with Cowles, John R.; Cowles, M.) On  $Y^2 = X^3 + k$  and the Thue rank of cubic curves. **85b:11020**  
 Coates, John Infinite descent on elliptic curves with complex multiplication. **85d:11101**  
 (with Goldstein, Catherine) Some remarks on the main conjecture for elliptic curves with complex multiplication. **85d:11100**  
 Cowles, John R. See Chowla, S.; et al., **85b:11020**  
 Cowles, M. See Chowla, S.; et al., **85b:11020**  
 Cremona, J. E. Hyperbolic tessellations, modular symbols, and elliptic curves over complex quadratic fields. **85j:11063**  
 Gérard, Yves Un exemple de groupe de Galois d'une extension transcendente. [Example of a Galois group of a transcendental extension] **85c:12004**  
 Gillard, Roland Séries d'Eisenstein et critère de Kummer. [Eisenstein series and the Kummer criterion] **85b:11048**  
 Goldstein, Catherine See Coates, John, **85d:11100**  
 Greenberg, Ralph On the Birch and Swinnerton-Dyer conjecture. **85c:11052**  
 van Hamme, Lucien The  $p$ -adic gamma function and the congruences of Atkin and Swinnerton-Dyer. **85j:11172**  
 Hulek, Klaus Projective geometry of elliptic curves. **85g:14035**  
 Kato, Goro C. (with Lubkin, Saul) Zeta matrices of elliptic curves. **85e:14029**  
 Lang, Serge Conjectured Diophantine estimates on elliptic curves. **85d:11024**  
 Laak, Michael ★ Elliptic curves over number fields with prescribed reduction type. **85j:11064**  
 Laurent, Michel Minoration de la hauteur de Néron-Tate. [Lower bounds of the Néron-Tate height] **85e:11048**  
 Lubkin, Saul See Kato, Goro C., **85e:14029**  
 Mestre, J.-F. Courbes elliptiques et formules explicites. [Elliptic curves and explicit formulas] **85g:14025**  
 Nakamura, Tetsuo On Shimura's elliptic curve over  $\mathbb{Q}(\sqrt{29})$ . **85i:11051**  
 Parnami, J. C. See Rishi, Dharam Bir; et al., **85b:11047**  
 Perrin-Riou, Bernadette Sur les hauteurs  $p$ -adiques. (English summary) [On  $p$ -adic heights] **85b:11046**  
 Rajwade, A. R. See Rishi, Dharam Bir; et al., **85b:11047**  
 Rishi, Dharam Bir (with Parnami, J. C.; Rajwade, A. R.) Complex multiplication by  $(1 + \sqrt{-19})/2$ . **85b:11047**  
 Rumely, Robert S. A formula for the grössencharacter of a parametrized elliptic curve. **85e:14064**  
 Satgé, P. Une généralisation du calcul de Selmer. [A generalization of Selmer's calculation] **85g:11046**  
 Strooker, R. J. Reduction of elliptic curves over imaginary quadratic number fields. **85e:14031**  
 Thomas, Emery (with Vasquez, A. T.) A family of elliptic curves and cyclic cubic field extensions. **85f:11019**  
 Tilouine, Jacques Fonctions  $L$   $p$ -adiques à deux variables et  $\mathbb{Z}_p^2$ -extensions. (English summary) [Two variable  $p$ -adic  $L$  functions and  $\mathbb{Z}_p^2$ -extensions] **85g:11048**  
 Tsanakis, Nicholas See Brenner, Andrew, **85c:11028**  
 Ughi, E. On the number of points of elliptic curves over a finite field and a problem of B. Segre. **85e:14030**  
 Vasquez, A. T. See Thomas, Emery, **85f:11019**  
 Zimmer, Horst G. Correction and remarks concerning: "Quasifunctions on elliptic curves over local fields" [J. Reine Angew. Math. **307/308** (1979), 221-246; MR **80g:14024**]. **85f:14022**

#### 14K10 Algebraic moduli, classification

- Faltings, Gerd Arakelov's theorem for abelian varieties. **85m:14061**  
 Mumford, David On the Kodaira dimension of the Siegel modular variety. **85d:14061**

#### secondary classifications (14K10)

- Accola, Robert D. M. On defining equations for the Jacobian locus in genus five. **85d:14040**  
 Borovoi, M. V. Langlands' conjecture concerning conjugation of connected Shimura varieties. **85j:11066**  
 Brylinski, Jean-Luc "1-motifs" et formes automorphes (théorie arithmétique des domaines de Siegel). ["1-motives" and automorphic forms (arithmetic theory of Siegel domains)] **85g:11047**  
 Carayol, Henri Sur la mauvaise réduction des courbes de Shimura. (English summary) [Bad reduction of Shimura curves] **85e:11050**  
 Morrison, David R. On  $K3$  surfaces with large Picard number. **85j:14071**  
 Mulase, Motohico Algebraic geometry of soliton equations. **85b:14022**  
 Schappacher, Norbert Propriétés de rationalité de valeurs spéciales de fonctions  $L$  attachées aux corps CM. [Rationality properties of special values of  $L$ -functions associated with CM-fields] **85k:11062**  
 Schwartz, Charles F. A Mordell-Weil group of rank 8, and a subgroup of finite index. **85j:14070**  
 Shokurov, V. V. Prym varieties: theory and applications. (Russian) **85e:14040**

## 14K15 Arithmetic ground fields [See also 11Dxx, 11Fxx, 14Gxx.]

- Kato, Goro C. On the generators of the first homology with compact supports of the Weierstrass family in characteristic zero. **85e:14083**
- Mazur, Barry C. (with Tate, John) Canonical height pairings via biextensions. **85j:14081**
- Néron, A. Fonctions  $\theta$ - $p$ -adiques et hauteurs  $p$ -adiques. [ $p$ -adic theta functions and  $p$ -adic heights] **85g:14084**
- Oesterlé, J. Construction de hauteurs archimédiennes et  $p$ -adiques suivant la méthode de Bloch. [Construction of Archimedean and  $p$ -adic heights following the method of Bloch] **85g:14085**
- Silverman, Joseph H. The Néron fiber of abelian varieties with potential good reduction. **85b:14089**
- Tanaka, S. G. Cycles of abelian varieties of prime dimension over finite and number fields. (Russian) **85b:14090**
- Tate, John See Mazur, Barry C., **85j:14081**

## secondary classifications (14K15)

- Birch, B. J. (with Stephens, N.) Heegner's construction of points on the curve  $y^2 = x^3 - 1728x$ . **85j:11083**
- Brylinski, Jean-Luc "1-motifs" et formes automorphes (théorie arithmétique des domaines de Siegel). ["1-motives" and automorphic forms (arithmetic theory of Siegel domains)] **85j:11047**
- Carayal, Henri Sur la mauvaise réduction des courbes de Shimura. (English summary) [Bad reduction of Shimura curves] **85i:11050**
- Chahal, Jasbir Singh On an identity of Desboves. **85m:11015**
- Dem'yanenko, V. A. Orders of torsion points of elliptic curves. (Russian) **85k:11028**
- On Abel relations. (Russian) **85m:14090**
- Gerotto, G. Systems of bifactors with positive characteristics. (Italian) **85d:14082**
- Gross, Benedict (with Zagier, Don) Points de Heegner et dérivées de fonctions  $L$ . (English summary) [Heegner points and derivatives of  $L$ -functions] **85d:11083**
- Harris, Michael Arithmetic vector bundles on Shimura varieties. (See **85g:11003**)
- Hennart, Guy Représentations  $L$ -adiques abéliennes. [Abelian  $L$ -adic representations] **85d:11070**
- Kuga, Michio Chemistry and GTFABVs. (See **85g:11003**)
- Momose, Fumiyuki Galois action on some ideal section points of the abelian variety associated with a modular form and its application. **85d:11050**
- Murty, V. Kumar Algebraic cycles on abelian varieties. **85b:14029**
- Nakamura, Tetsuo On Shimura's elliptic curve over  $\mathbb{Q}(\sqrt{29})$ . **85i:11051**
- Obata, Masami On  $L$ -adic representations attached to automorphic forms. **85f:11039**
- On the zeta function of an abelian scheme over the Shimura curve. II. **85j:11068**
- On the zeta function of an abelian scheme over the Shimura curve. **85j:11067**
- Opolka, Hans  $\star$  Galoisdarstellungen und Galois Kohomologie von Zahlkörpern. (German) [Galois representations and Galois cohomology of number fields] **85c:11105**
- Parnami, J. C. See Rishi, Dharam Bir; et al., **85b:11047**
- Philippon, P. Variétés abéliennes et indépendance algébrique. I. [Abelian varieties and algebraic independence. I] **85j:11083**
- Variétés abéliennes et indépendance algébrique. II. Un analogue abélien du théorème de Lindemann-Weierstrass. [Abelian varieties and algebraic independence. II. An abelian analogue of the Lindemann-Weierstrass theorem] **85j:11084**
- Poulakis, Dimitrios Points rationnels sur  $\mathbb{Q}$  de la jacobienne de la courbe modulaire  $X_0(3^4)$ . (English summary) [Rational points over  $\mathbb{Q}$  of the Jacobian of the modular curve  $X_0(3^4)$ ] **85j:11085**
- Rajwade, A. R. See Rishi, Dharam Bir; et al., **85b:11047**
- Raynaud, Michel Around the Mordell conjecture for function fields and a conjecture of Serge Lang. **85e:11041**
- Rishi, Dharam Bir (with Parnami, J. C.; Rajwade, A. R.) Complex multiplication by  $(1 + \sqrt{-19})/2$ . **85b:11047**
- Schneider, Peter Iwasawa  $L$ -functions of varieties over algebraic number fields. A first approach. **85d:11063**
- Silverman, Joseph H. Representations of integers by binary forms and the rank of the Mordell-Weil group. **85f:11022**
- Stephens, N. See Birch, B. J., **85j:11083**
- Well, André Euler and the Jacobians of elliptic curves. **85d:14080**
- Wüstholz, G. Über das Abelsche Analogon des Lindemannschen Satzes. I. [On the abelian analogue of the Lindemann theorem. I] **85i:11064**
- Zagier, Don See Gross, Benedict, **85d:11082**
- Zink, Th. Isogenieklassen von Punkten von Shimuramannigfaltigkeiten mit Werten in einem endlichen Körper. [Isogeny classes of points of Shimura varieties with values in a finite field] **85c:11051**

## 14K20 Analytic theory; abelian integrals and differentials

- Gerotto, G. Congruences for elliptic integrals. (Italian) **85e:14063**
- Hassma, Fumio Algebraic cycles on abelian varieties with many real endomorphisms. **85a:14029**
- Kempf, George  $\star$  Abelian integrals. **85j:14082**
- Khorosov, E. I. Neumann's problem and equations that define matrices of periods of hyperelliptic Riemann surfaces. (Russian) **85m:14062**
- Little, John B. On the converse of Abel's theorem in characteristic  $p$ . **85g:14056**
- Murty, V. Kumar Exceptional Hodge classes on certain abelian varieties. **85m:14063**
- Welters, G. E. Polarized abelian varieties and the heat equations. **85f:14045**

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- Bosch, Siegfried On  $p$ -adic uniformization. **85m:14035a**
- On the reduction of abelian varieties. **85m:14035b**
- Ehrenpreis, Leon On Noether's theorem. (French summary) **85m:32029**
- Faltings, Gerd Arakelov's theorem for abelian varieties. **85m:14061**
- Forest, M. Gregory (with McLaughlin, D. W.) Modulations of sinh-Gordon and sine-Gordon wavetrains. **85a:35080**

- Gerritsen, Lothar  $p$ -adic Siegel halfspace. **85m:14036b**
- Gunning, R. C. An identity for abelian integrals. **85f:14047**
- Krichever, I. M. Algebro-geometric spectral theory of the Schrödinger difference operator and the Peierls model. (Russian) **85m:82131**
- Little, John B. Translation manifolds and the converse of Abel's theorem. **85d:14041**
- McLaughlin, D. W. See Forest, M. Gregory, **85a:35080**
- Mumford, David On the Kodaira dimension of the Siegel modular variety. **85d:14061**
- Petrov, G. S. The number of zeros of complete elliptic integrals. (Russian) **85j:33002**
- Sasaki, Ryuji Modular forms vanishing at the reducible points of the Siegel upper-half space. **85c:11048**
- Silhol, Robert Real abelian varieties and the theory of Comessatti. **85j:14077**
- Varchenko, A. N. Estimation of the number of zeros of an abelian integral depending on a parameter, and limit cycles. (Russian) **85g:32033**
- Welters, G. E. A characterization of nonhyperelliptic Jacobi varieties. **85j:14055**
- Wüstholz, G. Recent progress in transcendence theory. (See **85i:11061**)

## 14K22 Complex multiplication [See also 11G15.]

- Ribet, Kenneth A. Hodge classes on certain types of abelian varieties. **85a:14030**
- Rumely, Robert S. A formula for the grössencharacter of a parametrized elliptic curve. **85e:14064**

## secondary classifications (14K22)

- Bernardi, D. (with Goldstein, Catherine; Stephens, N.) Notes  $p$ -adiques sur les courbes elliptiques. [ $p$ -adic notes on elliptic curves] **85k:11029**
- Borovoi, M. V. Langlands' conjecture concerning conjugation of connected Shimura varieties. **85j:11066**
- Coates, John Infinite descent on elliptic curves with complex multiplication. **85d:11101**
- (with Goldstein, Catherine) Some remarks on the main conjecture for elliptic curves with complex multiplication. **85d:11100**
- Goldstein, Catherine See Coates, John, **85d:11100** and Bernardi, D.; et al., **85k:11029**
- Lang, Serge  $\star$  Complex multiplication. **85f:11042**
- Perrin-Riou, Bernadette Descente infinie et hauteur  $p$ -adique sur les courbes elliptiques à multiplication complexe. [Infinite descent and  $p$ -adic height on elliptic curves with complex multiplication] **85e:11040**
- Stephens, N. See Bernardi, D.; et al., **85k:11029**
- Tilouine, Jacques Fonctions  $L$   $p$ -adiques à deux variables et  $\mathbb{Z}_p^2$ -extensions. (English summary) [Two variable  $p$ -adic  $L$  functions and  $\mathbb{Z}_p^2$ -extensions] **85g:11048**
- Zink, Th. Isogenieklassen von Punkten von Shimuramannigfaltigkeiten mit Werten in einem endlichen Körper. [Isogeny classes of points of Shimura varieties with values in a finite field] **85c:11051**

## 14K25 Theta functions

- Babich, M. V. (with Bobenko, A. I.; Matveev, V. B.) Reductions of Riemann theta functions of genus  $g$  to theta functions of lesser genus, and symmetries of algebraic curves. (Russian) **85f:14046**
- Barotti, Iacopo Differential equations of theta functions. (Italian. English summary) **85e:14085**
- Bobenko, A. I. See Babich, M. V.; et al., **85f:14046**
- Candilera, Maurizio (with Cristante, Valentino) Bi-extensions associated to divisors on abelian varieties and theta functions. **85j:14083**
- Cristante, Valentino See Candilera, Maurizio, **85j:14083**
- Dubrovin, B. A. Multidimensional theta functions and their application to the integration of nonlinear equations. **85j:14084**
- Gunning, R. C. An identity for abelian integrals. **85f:14047**
- Matveev, V. B. See Babich, M. V.; et al., **85f:14046**
- Mumford, David  $\star$  Tata lectures on theta. I. **85h:14028**
- (Musili, C.) See Mumford, David, **85h:14028**
- (Nori, Madhav V.) See Mumford, David, **85h:14028**
- (Previsto, E.) See Mumford, David, **85h:14028**
- (Stillman, M.) See Mumford, David, **85h:14028**

## secondary classifications (14K25)

- Accola, Robert D. M. On defining equations for the Jacobian locus in genus five. **85f:14040**
- Albeverio, S. (with Blanchard, Ph.; Hoegh-Krohn, R.) Feynman path integrals, the Poisson formula and the theta function for the Schrödinger operators. **85c:58027**
- Belokolos, E. D. (with Èno'skii, V. Z.) Generalized Lamé ansatz. (Russian. English summary) **85d:35095**
- Bertrand, D. Propriétés arithmétiques de fonctions  $\theta$  à plusieurs variables. [Arithmetical properties of theta functions of several variables] (See **85i:11001**)
- Bikbaev, R. F. (with Bobenko, A. I.; It's, A. R.) Finite-zone integration of the Landau-Lifshitz equation. (Russian) **85m:58085**
- Blanchard, Ph. See Albeverio, S.; et al., **85c:58027**
- Blinder, S. M. See Hanneston, T., **85h:81013**
- Bobenko, A. I. Finite-range solutions in the language of automorphic functions. The Kadomtsev-Petviashvili equation. (Russian. English summary) **85d:58037**
- Periodic finite-zone solutions of the sine-Gordon equation. (Russian) **85m:58086**
- See also Bikbaev, R. F.; et al., **85m:58085**
- Bogolyubov, N. N., Jr. (with Prikarpatskii, A. K.) Application of methods of algebraic geometry to the description of completely integrable ordinary differential Riccati equations. I. (Russian) **85h:58075**
- Cherednik, I. V. Group interpretation of Baker functions and  $\tau$ -functions. (Russian) **85m:58087**
- Èno'skii, V. Z. See Belokolos, E. D., **85d:35095**
- Gerotto, G. Systems of bifactors with positive characteristics. (Italian) **85d:14062**
- Hanneston, T. (with Blinder, S. M.) Theta-function representation for particle-in-a-box propagator. (Italian and Russian summaries) **85h:81013**
- Hoegh-Krohn, R. See Albeverio, S.; et al., **85c:58027**



- Ita, A. R. See Bikbaev, R. F.; et al., 85m:58085
- Jaekel, M. T. (with Maillard, J.-M.) Algebraic invariants in soluble models. 85i:82010
- Jaworski, M. A note on singular solutions of the Korteweg-de Vries equation. 85g:35104
- Khorosov, E. I. Exact solutions of the C. Neumann problem on the motion of a point on a sphere under the action of a quadratic potential. (Russian) 85e:58070
- Maillard, J.-M. See Jaekel, M. T., 85i:82010
- Manni, Riccardo Salvati On the nonidentically zero Nullwerte of Jacobians of theta functions with odd characteristics. 85b:11041
- Mulase, Motohiko Algebraic geometry of soliton equations. 85h:14022
- Prikarpat'skiĭ, A. K. See Bogolyubov, N. N., Jr., 85h:58075
- Veselov, A. P. The Landau-Lifshits equation and integrable systems of classical mechanics. (Russian) 85e:58055
- Watanabe, Osamu Notes on theta functions for open Riemann surfaces. 85e:30081
- Zakharov, M. The Heisenberg group, theta-functions and the group  $SO(3)$ . 85j:22016
- Zappa, Paolo On a generalization of the Weierstrass  $p$ . (Italian. English summary) 85a:32008

#### 14K30 Picard schemes, higher Jacobians

- Clemens, Herbert On the surjectivity of Abel-Jacobi mappings. 85b:14061
- Ėndryushka, S. Yu. The intermediate Jacobian of a three-dimensional fibration on a conic is a Prym variety. (Russian) 85i:14026
- Turner, Stuart Canonical polarizations of Picard schemes. 85e:14066

##### secondary classifications (14K30)

- Albano, Alberto A generic Torelli theorem for the quartic hypersurface of  $P^4$  with a double line. (Italian. English summary) 85b:14048
- Bardelli, Fabio Counterexamples to Torelli theorem in any odd dimension greater than one. (Italian summary) 85e:14021
- Beauville, Arnaud Variétés rationnelles et unirationnelles. [Rational and unirational varieties] 85e:14075
- Beltrametti, Mauro (with Francia, Paolo) Conic bundles on nonrational surfaces. 85e:14056
- Clemens, Herbert Double solids. 85e:14058
- Francia, Paolo See Beltrametti, Mauro, 85e:14056
- Johnson, David Lewis Secondary characteristic classes and intermediate Jacobians. 85h:32048
- Letizia, M. The Abel-Jacobi mapping for the quartic threefold. 85g:14046
- Shokurov, V. V. Prym varieties: theory and applications. (Russian) 85e:14040
- Suwa, Noriyuki de Rham cohomology of algebraic surfaces with  $q = -p_0$  in char.  $p$ . 85i:14022

#### 14K99 None of the above, but in this section

##### secondary classifications (14K99)

- Krasnov, V. A. An Albanese mapping for real algebraic varieties. (Russian) 85d:14075
- Harnack-Thom inequalities for mappings of real algebraic varieties. (Russian) 85d:14078
- Nori, Madhav V. The fundamental group-scheme of an abelian variety. 85b:14063
- Van Steen, Guido Decomposition of non-Archimedean analytic tori. 85j:14040

#### 14Lxx Group schemes (For linear algebraic groups, see 20Gxx. For Lie algebras, see 17B45.)

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- Algebraic groups ★ Open problems in algebraic groups. 85e:23002

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- Berthelot, Pierre (with Breen, Lawrence; Messing, William) ★ Théorie de Dieudonné cristalline. II. (French) [Crystalline Dieudonné theory. II] 85k:14023
- Breen, Lawrence See Berthelot, Pierre; et al., 85k:14023
- Fontaine, Jean-Marc (with Laffaille, Guy) Construction de représentations  $p$ -adiques. [Construction of  $p$ -adic representations] 85e:14028
- Fossium, Robert M. Invariants of formal group law actions. 85e:14067
- Gerotto, G. Systems of bifactors with positive characteristics. (Italian) 85d:14062
- Laffaille, Guy See Fontaine, Jean-Marc, 85e:14028
- Messing, William See Berthelot, Pierre; et al., 85k:14023
- Nakamura, Tetsuo On two-dimensional formal groups over the prime field of characteristic  $p > 0$ . 85e:14068

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- Fesenko, I. B. See Vostokov, S. V., 85h:11076
- Gerotto, G. Congruences for elliptic integrals. (Italian) 85e:14063
- Ochanine, Serge Sur l'utilisation de la théorie des groupes formels dans le 16ème problème de Hilbert. [On the use of the theory of formal groups in Hilbert's 16th problem] 85i:14012
- Vostokov, S. V. (with Fesenko, I. B.) The Hilbert symbol for Lubin-Tate formal groups. II. (Russian) 85h:11076

#### 14L10 Group varieties

##### secondary classifications (14L10)

- Barsotti, Iacopo Differential equations of theta functions. (Italian. English summary) 85e:14065
- Chernousov, V. I. Rationality of group compact varieties of classical type. (Russian. English summary) 85i:14031

#### 14L15 Group schemes

##### secondary classifications (14L15)

- Bertrand, D. Endomorphismes de groupes algébriques; applications arithmétiques. [Endomorphisms of algebraic groups; arithmetic applications] 85d:11069
- Théorie de Kummer sur les groupes algébriques. [Kummer theory on algebraic groups] (See 85g:11009)
- Nori, Madhav V. The fundamental group-scheme. 85g:14010
- Oda, Tadao Hironaka group schemes and resolution of singularities. 85m:14020
- Hironaka's additive group scheme. II. 85i:14006
- Strano, Rosario Principal homogeneous spaces over Hensel rings. 85b:14025

#### 14L17 Affine algebraic groups, hyperalgebra constructions [See also 17B45, 18D35.]

- Jardine, J. F. Fibrations of algebraic groups. 85i:14027
- Nakao, Zensho On definition of affine algebraic groups. 85j:14085
- Shigano, Hiroshi Projective action of affine group schemes. 85f:14048
- Shudo, Takefumi On the relatively smooth subhyperalgebras of hyperalgebras. 85e:14069
- Takeuchi, Mitsuhiro Generators and relations for the hyperalgebras of reductive groups. 85d:14063
- Ulbrich, Karl-Helms Sur l'injection de  $\text{Ext}(S, \mathcal{G}_A^A)$  dans  $\widehat{\text{Br}}(A/k)$ . (English summary) [On the injection of  $\text{Ext}(S, \mathcal{G}_A^A)$  into  $\widehat{\text{Br}}(A/k)$ ] 85m:14064

##### secondary classifications (14L17)

- Spaltenstein, N. A property of special representations of Weyl groups. 85a:20015
- Wang, Jian Pan Coinduced representations and injective modules for hyperalgebra  $b$ . 85j:20039

#### 14L20 Finite group schemes

- Lewin-Ménégaux, Renée Modèles minimaux de toreseurs. (English summary) [Minimal models for torsors] 85d:14064
- Lubotsky, Alexander (with Magid, Andy R.) Free pronipotent groups. 85b:14062
- Magid, Andy R. See Lubotsky, Alexander, 85b:14062
- Nori, Madhav V. The fundamental group-scheme of an abelian variety. 85b:14063

#### 14L30 Group actions on varieties or schemes [See also 14D25.]

- Bas, Hyman A nontriangular action of  $G_n$  on  $A^3$ . 85j:14086
- Beklemishev, N. D. Algebras of invariants of forms that are complete intersections. (Russian) 85f:14049
- Białynicki-Birula, Andrzej (with Świącicka, Joanna) Complete quotients by algebraic torus actions. 85d:14065
- Borho, Walter (with MacPherson, R.) Partial resolutions of nilpotent varieties. 85j:14087
- Brion, Michel Invariants d'un sous-groupe unipotent maximal d'un groupe semi-simple. [Invariants of a maximal unipotent subgroup of a semisimple group] 85a:14031
- De Concini, Corrado (with Procesi, Claudio) Complete symmetric varieties. 85e:14070
- Dixmier, Jacques Série de Poincaré et systèmes de paramètres pour les invariants des formes binaires. [Poincaré series and systems of parameters for invariants of binary forms] 85f:14050
- Grosshans, F. D. The invariants of unipotent radicals of parabolic subgroups. 85c:14029
- Kac, Victor G. Root systems, representations of quivers and invariant theory. 85j:14088
- Katsylo, P. I. Rationality of orbit spaces of irreducible representations of the group  $SL_2$ . (Russian) 85g:14057
- Knop, Friedrich Mehrfach transitive Operationen algebraischer Gruppen. [Multiply transitive operations of algebraic groups] 85b:14064
- Konarski, Jerzy A pathological example of an action of  $k^*$ . 85g:14058a
- Properties of projective orbits of actions of affine algebraic groups. 85g:14058b
- MacPherson, R. See Borho, Walter, 85j:14087
- Miyajishi, Masayoshi On group actions. 85c:14030
- Panyushev, D. I. Semisimple groups of automorphisms of a four-dimensional affine space. (Russian) 85g:14059
- Isomorphisms between orbit spaces. (Russian) 85f:14051
- Procesi, Claudio See De Concini, Corrado, 85e:14070
- Sekiguchi, Jirō The nilpotent subvariety of the vector space associated to a symmetric pair. 85d:14068
- Spaltenstein, N. Dégénérescences des formes bilinéaires. [Degeneracy of bilinear forms] 85a:14032
- Świącicka, Joanna See Białynicki-Birula, Andrzej, 85d:14065

##### secondary classifications (14L30)

- Akhieser, D. N. Equivariant completions of homogeneous algebraic varieties by homogeneous divisors. 85j:32052
- Andersen, Henning Haahr Filtrations of cohomology modules for Chevalley groups. 85k:20128
- Aramova, Annetta G. The type of the invariants of a finite pseudoreflection group acting on a local Cohen-Macaulay ring. 85b:13029

- Barthel, Gottfried Homeomorphism classification of normal surfaces in  $P_3$  with  $C^*$ -action. 85j:14063
- Białynicki-Birula, Andrzej (with Sommese, Andrew J.) Quotients by  $C^*$  and  $SL(2, C)$  actions. 85i:32045
- Brion, Michel Invariants de plusieurs formes binaires. (English summary) [Invariants of several binary forms] 85i:15037
- Brylinski, Jean-Luc (Co)-homologie d'intersection et faisceaux pervers. [Intersection (co)homology and perverse sheaves] 85i:32016a
- Carrell, J. B. (with Sommese, Andrew J.) Almost homogeneous  $C^*$  actions on compact complex surfaces. 85g:32044
- (with Sommese, Andrew J.) A generalization of a theorem of Horrocks. 85g:32054
- Farkas, Daniel R. Multiplicative invariants. 85h:10043
- Fantlberg, Amasa Stable base loci of representations of algebraic groups. 85f:14007
- Formanek, E. Invariants and the ring of generic matrices. 85g:15031
- Goldstein, Norman Finding the nondegenerate quadratic singularities. 85a:14033
- Hirschowitz, André Le groupe de Chow équivariant. (English summary) [Invariant Chow groups] 85j:14007
- Kato, Shin-ichi A realization of irreducible representations of affine Weyl groups. 85h:20060
- Kharchenko, V. K. Noncommutative invariants of finite groups and Noetherian varieties. 85j:16062
- Lewis-McGau, René Modèles minimaux de toreseurs. (English summary) [Minimal models for torsors] 85d:14084
- Lin, V. Ya. See Zaidenberg, M. G., 85i:14018
- Luna, D. (with Vust, Th.) Plongements d'espaces homogènes. [Embeddings of homogeneous spaces] 85a:14035
- Moore, Ross (with Wardemann, Reiner)  $PGL(4)$  acts transitively on  $M(-1, 2)$ . 85g:14024
- Muill, C. (with Seshadri, C. S.) Schubert varieties and the variety of complexes. 85d:14072
- Nakajima, Haruhisa Rings of invariants of finite groups which are hypersurfaces. 85e:20036
- Regular rings of invariants of unipotent groups. 85f:20038
- Popov, V. L. Syzygies in the theory of invariants. (Russian) 85g:14013
- Ramanan, S. (with Ramanan, A.) Some remarks on the instability flag. 85j:14017
- Ramanan, A. See Ramanan, S., 85j:14017
- Santharoubane, L. J. Infinite families of nilpotent Lie algebras. 85b:17006
- Schwarz, Gerald W. Invariant theory of  $G_2$ . 85c:20031
- Schlicht, Jiré Invariant vector fields on a simple Lie algebra under the adjoint action. 85c:17005
- Seshadri, C. S. See Muill, C., 85d:14072
- Shigano, Hiroshi Projective action of affine group schemes. 85f:14048
- Sommese, Andrew J. See Carrell, J. B., 85g:32044; Carrell, J. B., 85g:32054 and Białynicki-Birula, Andrzej, 85i:32045
- Springer, T. A. Quelques applications de la cohomologie d'intersection. [Some applications of intersection cohomology] 85i:32016b
- Séries de Poincaré dans la théorie des invariants. [Poincaré series in invariant theory] 85g:20057
- Vust, Th. See Luna, D., 85a:14035
- Wagreich, Philip The structure of quasihomogeneous singularities. 85e:14051
- Wahl, Jonathan M. Derivations, automorphisms and deformations of quasihomogeneous singularities. 85g:14006
- Wardemann, Reiner See Moore, Ross, 85g:14024
- Wolper, James S. Some intersection properties of the fibres of Springer's resolution. 85k:20140
- Zaidenberg, M. G. (with Lin, V. Ya.) An irreducible, simply connected algebraic curve in  $C^2$  is equivalent to a quasihomogeneous curve. (Russian) 85i:14018

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- Dolgachev, Igor V. Weighted projective varieties. 85g:14060
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- Reid, Miles Decomposition of toric morphisms. 85e:14071
- Vokreemskii, V. E. (with Klyachko, A. A.) Toric Fano varieties and systems of roots. (Russian) 85k:14024

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- Brylinski, Jean-Luc "I-motifs" et formes automorphes (théorie arithmétique des domaines de Siegel). ["I-motives" and automorphic forms (arithmetic theory of Siegel domains)] 85g:11047
- Khovanov, A. G. Newton polyhedra (resolution of singularities). (Russian) 85j:14002
- Komeda, Jiryo On the existence of Weierstrass points with a certain semigroup generated by 4 elements. 85d:14039
- Miyazaki, Masayoshi On group actions. 85c:14030

## 14L35 Classical groups (geometric aspects)

- Kraft, Hanspeter (with Procesi, Claudio) On the geometry of conjugacy classes in classical groups. 85b:14065
- Procesi, Claudio See Kraft, Hanspeter, 85b:14065
- Seshadri, C. S. Standard monomial theory and the work of Demazure. 85d:14067

## secondary classifications (14L35)

- Antonyan, L. V. (with Élashvili, A. G.) Classification of spinors of dimension sixteen. (Russian. English summary) 85b:15034
- Borevich, Z. I. (with Vavilov, N. A.) Arrangement of subgroups containing a group of block diagonal matrices in the general linear group over a ring. (Russian) 85j:20046b
- (with Vavilov, N. A.) The net determinant over a Bezoutian local ring. (Russian) 85j:20046c

- (with Kolotilina, L. Yu.) The subnormalizer of net subgroups in the general linear group over a ring. (Russian) 85j:20046d
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- van der Kallen, Wilberd A group structure on certain orbit sets of unimodular rows. 85b:13014
- Kolotilina, L. Yu. See Borevich, Z. I., 85j:20046d
- Lakshmibai, V. (with Seshadri, C. S.) Singular locus of a Schubert variety. 85j:14095
- Seshadri, C. S. See Lakshmibai, V., 85j:14095
- Vavilov, N. A. Parabolic subgroups of the Chevalley group over a commutative ring. (Russian) 85j:20046a
- See also Borevich, Z. I., 85j:20046b and 85j:20046c

## 14L40 Other algebraic groups (geometric aspects)

- Lee, Dong Hoon (with Wu, Ta Sun) On prealgebraic groups. 85j:14089
- Wu, Ta Sun See Lee, Dong Hoon, 85j:14089

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- (Gusevskii, N. A.) See Steinberg, Robert, 85a:14025
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- Steinberg, Robert Kleinian singularities and unipotent elements. (Russian) 85a:14025
- Zaleskii, A. E. Reducible linear groups generated by pseudoreflections. (Russian. English summary) 85d:20043

## 14L99 None of the above, but in this section

## secondary classifications (14L99)

- Matthews, C. R. (with Vaserstein, Leonid; Weisfeiler, Boris) Congruence properties of Zariski-dense subgroups. I. 85d:20040
- Padmanabhan, R. Logic of equality in geometry. 85m:06012
- Smith, S. P. Gelfand-Kirillov dimension of rings of formal differential operators on affine varieties. 85d:16019
- Vaserstein, Leonid See Matthews, C. R.; et al., 85d:20040
- Weisfeiler, Boris See Matthews, C. R.; et al., 85d:20040

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- Bresinsky, Henrik (with Schenzel, Peter; Vogel, Wolfgang) On liaison, arithmetical Buchsbaum curves and monomial curves in  $P^3$ . 85c:14031
- Monomial Buchsbaum ideals in  $P^3$ . 85j:14090
- Brodmann, Markus Two types of birational models. 85g:14061
- Fiorrentini, Mario Examples of Buchsbaum curves that are not Macaulay. (Italian. French summary) 85m:14065
- Lipkovich, A. On unbranched rings and a criterion for irreducibility in the formal power series ring. 85j:14091
- Mora, Ferdinando Classification of monomial curves. (Italian summary) 85j:14092
- Orecchia, Ferruccio Macaulay's examples. (Italian) (See 85g:14004)
- Schenzel, Peter See Bresinsky, Henrik; et al., 85c:14031
- Strickland, Elisabetta On the exactness of the circular complex. 85j:14093
- Vitulli, Marie A. The hyperplane sections of weakly normal varieties. 85g:14062
- Vogel, Wolfgang See Bresinsky, Henrik; et al., 85c:14031
- Weibel, Charles A. Set-theoretic complete intersection points on curves. 85f:14052

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- Amasaki, Mutsumi Preparatory structure theorem for ideals defining space curves. 85j:14006
- Bresinsky, Henrik Minimal free resolutions of monomial curves in  $P^3$ . 85d:14042
- Brodmann, Markus Local cohomology of certain Rees- and form-rings. II. 85i:13026
- Eisenbud, D. (with Goto, Shiro) Linear free resolutions and minimal multiplicity. 85f:13023
- Geramita, A. V. (with Maroscia, P.; Roberts, Leslie G.) The Hilbert function of a reduced  $k$ -algebra. 85c:13018
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- Kanevsky, D. On the algebro-geometric structure of the moduli space of completely reachable systems. 85g:14012
- Kustin, Andrew R. (with Miller, Matthew) Constructing big Gorenstein ideals from small ones. 85f:13014
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- Marinov, Vasil P. Perfection of ideals generated by the Pfaffians of an alternating matrix. I. 85i:14029
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- Orecchia, Ferruccio Generalized Hilbert functions of Cohen-Macaulay varieties. 85b:13034
- Reuser, Lex E. Cohen-Macaulay algebraic monoids. 85c:20063
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- Ran, Ziv Systèmes linéaires complets de sections hypersurfaces sur les variétés projectives de codimension 2. (English summary) [Complete linear systems of hypersurface sections on projective manifolds of codimension 2] 85d:14066  
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- Ballico, Edoardo (with Ellia, Philippe) Some more examples of curves in  $P^3$  with stable normal bundle. 85d:14025  
 Edge, W. L. Tangent spaces of a normal surface with hyperelliptic sections. 85b:14047  
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#### 14M10 Complete intersections

- Craigheo, Pier Carlo Points of irreducible cubic hypersurfaces of  $P^n_k$  as set-theoretic complete intersections. (Italian. English summary) 85d:14070  
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- Beklemishev, N. D. Algebras of invariants of forms that are complete intersections. (Russian) 85f:14049  
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#### 14M12 Determinantal varieties

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##### secondary classifications (14M12)

- Hirschowitz, André (with Marlin, Roger) Nouvelles surfaces à nœuds dans  $P^3$ . [New nodal surfaces in  $P^3$ ] 85b:14024  
 Marlin, Roger See Hirschowitz, André, 85b:14024  
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#### 14M15 Grassmannians, Schubert varieties [See also 51M35.]

- Hansen, Johan A connectedness theorem for flagmanifolds and Grassmannians. 85d:14071  
 Hasewinkel, Michel (with Martin, Clyde F.) Representations of the symmetric group, the specialization order, systems and Grassmann manifolds. 85b:14068  
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##### secondary classifications (14M15)

- Bureau, Werner Grassmann manifolds  $G_{n,k}$  defined synthetically as projections of special Segre manifolds. (Italian) 85k:51032  
 Carrell, J. B. Holomorphic  $C^*$  actions and vector fields on projective varieties. 85b:32043  
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- Goldstein, Norman Springer fibres with nonample normal bundles. 85g:14064  
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- Akyildiz, Ersan (with Carrell, J. B.) Zeros of holomorphic vector fields and the Gysin homomorphism. 85c:32020  
 Holomorphic vector fields and the geometry of homogeneous spaces. 85f:32055  
 Broughton, S. Allen (with Hoffman, Michael; Homer, William) The height of two-dimensional cohomology classes of complex flag manifolds. 85f:57027  
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 Kato, Yoshifumi On the vector fields on an algebraic homogeneous space. 85c:32054  
 Knop, Friedrich Mehrfach transitive Operationen algebraischer Gruppen. [Multiply transitive operations of algebraic groups] 85b:14064  
 Kurke, Herbert (with Theel, Horst) Some examples of vector bundles on the flag variety  $F(1, 2)$ . 85k:14008  
 Lusztig, George Left cells in Weyl groups. 85f:20035



- Mehta, V. B. (with Ramanan, A.) Homogeneous bundles in characteristic  $p$ . 85f:14014  
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 Urabe, Takanu Some properties of vector bundles on the flag variety  $Fl(r, s; n)$ . 85j:14030

## 14M20 Rational varieties

- Beauville, Arnaud Variétés rationnelles et unirationnelles. [Rational and unirational varieties] 85e:14077  
 Chernousov, V. I. Rationality of group compact varieties of classical type. (Russian. English summary) 85i:14031  
 Gurjar, Rajendra V. Subrings of a polynomial ring. (See 85g:00033)  
 Sathaye, A. Polynomial ring in two variables over a DVR: a criterion. 85j:14008

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- Carrell, J. B. (with Sommese, Andrew J.) Almost homogeneous  $C^*$  actions on compact complex surfaces. 85g:32044  
 Catanese, Fabrizio On the rationality of certain moduli spaces related to curves of genus 4. 85h:14022  
 Eisenbud, D. Rational curves with cusps. 85d:14037  
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 Kanavsky, D. On cubic planes and groups connected with cubic varieties. 85e:14014  
 Katsylo, P. I. Rationality of orbit spaces of irreducible representations of the group  $SL_2$ . (Russian) 85g:14067  
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 Voskresenskii, V. E. (with Klyachko, A. A.) Toric Fano varieties and systems of roots. (Russian) 85h:14024

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- Brune, Winfried Divisors on varieties of complexes. 85d:13031  
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## 14N05 Projective techniques

- Bulm, Alexandru Sur le discriminant des sections d'une variété projective singulière par des hypersurfaces de degré élevé. (English summary) [On the discriminant of hypersurface sections of high order of a projective singular variety] 85g:14085  
 Degoll, Lando Two new theorems on linear systems of quadrics with identically zero Jacobian. (Italian) 85i:14032  
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 Edge, W. L. The pairing of del Pezzo quintics. 85b:14070  
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- Akivis, M. A. The local algebraizability condition for a system of submanifolds of a real projective space. (Russian) 85c:53018  
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 Dimca, Alexandru A geometric approach to the classification of pencils of quadrics. 85e:14011  
 Edge, W. L. Tangent spaces of a normal surface with hyperelliptic sections. 85b:14047

- Ferrara, Ugo Some observations on linear systems of quadrics in ordinary space, and a new example of an algebraic surface of  $P^3$  endowed with  $oo^3$  trisecants. (Italian. English summary) 85b:14045

- Laksov, Dan Wronskians and Plücker formulas for linear systems on curves. 85h:14016  
 Naruki, Isao Some invariants for conics and their applications. 85a:51034  
 Piccolini, Lia Fioravanti Multistratified manifolds. (Italian. English summary) 85c:51038  
 Pione, Ragui A note on higher order dual varieties, with an application to scrolls. 85d:14058

- Ran, Ziv The structure of Gauss-like maps. 85j:32014

- Systèmes linéaires complets de sections hypersurfaces sur les variétés projectives de codimension 2. (English summary) [Complete linear systems of hypersurface sections on projective manifolds of codimension 2] 85d:14068

## 14N10 Enumerative problems

- Dale, Magmar Terracini's lemma and the secant variety of a curve. 85g:14066  
 Edge, W. L. Fricke's octavic curve. 85m:14060  
 Fulton, William (with Kleiman, Steven; MacPherson, R.) About the enumeration of contacts. 85d:14072  
 von zur Gathen, Joachim Secant spaces to curves. 85i:14035  
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## secondary classifications (14N10)

- Ballico, Edoardo (with Ellia, Philippe) Generic curves of small genus in  $P^3$  are of maximal rank. 85g:14032  
 Barth, Wolf Paul (with Peters, Chris) Automorphisms of Enriques surfaces. 85g:14052  
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- Krasnov, V. A. An Albanese mapping for real algebraic varieties. (Russian) 85d:14075  
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- Fiedler, Thomas New congruences in the topology of real plane algebraic curves. (Russian) 85b:14039  
 Letaila, M. Quotients by complex conjugation of nonsingular quadrics and cubics in  $P^3_C$  defined over  $R$ . 85f:14044  
 Strassen, V. Rank and optimal computation of generic tensors. 85b:15039  
 Viro, O. Ya. Planar real curves of degree 7 and 8: new prohibitions. (Russian) 85e:14044

## 15-XX LINEAR AND MULTILINEAR ALGEBRA; MATRIX THEORY (finite and infinite)

## secondary classifications (15-XX)

- Stockhausen, Manfred ★ Mathematische Behandlung naturwissenschaftlicher Probleme. Teil 3. (German) [Mathematical treatment of scientific problems. Part 3] (Not in MR)

## 15-01 Elementary exposition; textbooks

- All, Mohammad Iman ★ Matrices and linear transformations. 85b:15001  
 Basilevsky, Alexander ★ Applied matrix algebra in the statistical sciences. 85i:15001  
 Beiglböck, Wolf D. ★ Lineare Algebra. (German) [Linear algebra] 85j:15001  
 Boeck, Helmut ★ Einführung in die Theorie der linearen Vektorräume. (German) [Introduction to the theory of linear vector spaces] 85h:15002  
 Curtis, Charles W. ★ Linear algebra. 85h:15003  
 Dhrymes, Phoebus J. ★ Mathematics for econometrics. 85h:15004  
 Doob, Michael Applications of graph theory in linear algebra. 85g:15001  
 (Efimov, Oleg) See Ikramov, Kh. D., 85h:15005  
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 Il'in, V. A. (with Poznyak, E. G.) ★ Линейная алгебра. (Russian) [Linear algebra] 85i:15002

- Koecher, Max ★ *Lineare Algebra und analytische Geometrie*. (German) [Linear algebra and analytic geometry] 85b:15001
- Kubala, Jolanta (with Smaga, Edward; Stanis, Tadeusz) ★ *Elementy algebry liniowej*. (Polish) [Elements of linear algebra] 85c:15001
- Kuznetsov, Yu. A. See Voevodin, V. V., 85i:15003
- Poznyak, E. G. See Il'in, V. A., 85i:15002
- Smaga, Edward See Kubala, Jolanta; et al., 85c:15001
- Smith, Larry ★ *Linear algebra*. 85b:15006
- Stanis, Tadeusz See Kubala, Jolanta; et al., 85c:15001
- Voevodin, V. V. (with Kuznetsov, Yu. A.) ★ *Матрицы и вычисления*. (Russian) [Matrices and calculations] 85i:15003

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- Brieskorn, E. ★ *Lineare Algebra und analytische Geometrie. I*. (German) [Linear algebra and analytic geometry. I] 85m:00001
- Kalman, Dan The generalised Vandermonde matrix. 85b:15014
- Marek, Ivo (with Žitný, Karel) ★ *Matrix analysis for applied sciences. Vol. 1*. 85i:46001
- Pickert, Günter Comments on: "On the absence of zero divisors in vector spaces" [Praxis Math. 25 (1983), no. 4, 105-114] by D. Rüdthing. (German) 85j:15003
- Rüdthing, Dieter Über die Nullteilerfreiheit in Vektorräumen. [On the absence of zero divisors in vector spaces] 85j:15002
- See also Pickert, Günter, 85j:15003
- (Scholz, Erhard) See Brieskorn, E., 85m:00001
- Žitný, Karel See Marek, Ivo, 85i:46001

## 15-02 Advanced exposition (research surveys, monographs, etc.)

- Beklemishev, D. V. ★ *Дополнительные главы линейной алгебры*. (Russian) [Supplementary chapters in linear algebra] 85g:15002
- Gasparyan, A. S. ★ *О некоторых приложениях многомерных матриц*. (Russian) [Some applications of multidimensional matrices] 85g:15003
- Lafey, Thomas J. van der Waerden's conjecture on permanents and its resolution. 85g:15004
- Tyrtshnikov, E. E. See Voevodin, V. V., 85m:15001
- Voevodin, V. V. (with Tyrtshnikov, E. E.) Calculations with Toeplitz matrices. (Russian) 85m:15001
- Young, Nicholas J. Linear fractional transformations in rings and modules. 85c:15002

## secondary classifications (15-02)

- Ando, Tsuyoshi ★ *Totally positive matrices*. 85i:15033
- Zielke, G. *Verallgemeinerte inverse Matrizen*. [Generalized inverse matrices] 85a:15007

## 15-03 Historical (must also be assigned at least one classification number from Section 01)

## secondary classifications (15-03)

- Henderson, Harold V. (with Pukelsheim, Friedrich; Searle, Shaye R.) On the history of the Kronecker product. 85a:01039
- Pukelsheim, Friedrich See Henderson, Harold V.; et al., 85a:01039
- Searle, Shaye R. See Henderson, Harold V.; et al., 85a:01039

## 15-04 Explicit machine computation and programs (not the theory of computation or programming)

- Chi, Zhong Xian (with Shen, Shi Hu; Yang, Yuan Sheng) A topological algorithm for evaluation of determinants. (Chinese. English summary) 85c:15003
- Shen, Shi Hu See Chi, Zhong Xian; et al., 85c:15003
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- (Arushanyan, O. B.) See Rice, John R., 85i:65001
- Carpenter, J. A. ★ *KWIC index for numerical linear algebra*. 85a:00010
- Coffman, E. G., Jr. (with Yannakakis, Mihalis) Permuting elements within columns of a matrix in order to minimize maximum row sum. 85g:90063
- Purdy, G. B. A binary algorithm for solving  $n$  by  $n$  systems of integer equations. 85b:15004
- Rice, John R. ★ *Матричные вычисления и математическое обеспечение*. (Russian) [Matrix computations and mathematical software] 85i:65001
- Ruhe, Axel Rational Krylov sequence methods for eigenvalue computation. 85c:65043
- (Voevodin, V. V.) See Rice, John R., 85i:65001
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- Numerical algebra See Carpenter, J. A., 85a:00010

## 15-06 Proceedings, conferences, etc.

- (Beitia, M<sup>a</sup>. A.) See *Linear algebra and applications*, 85g:15005
- (Gracia, Juan-M.) See *Linear algebra and applications*, 85g:15005
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- Conference:

- Linear algebra and applications ★ *Álgebra lineal y aplicaciones*. [Linear algebra and applications] 85g:15005
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- Vitoria-Gasteiz ★ *Álgebra lineal y aplicaciones*. [Linear algebra and applications] 85g:15005

## 15A03 Vector spaces, linear dependence, rank

- Atkinson, M. D. (with Lloyd, Sherrienne) The ranks of  $m \times n \times (mn - 2)$  tensors. 85a:15001
- Beasley, LeRoy B. (with Pullman, Norman J.) Boolean-rank-preserving operators and Boolean-rank-1 spaces. 85i:15004
- Gabbasov, N. Z. Solvability of the problem of singular extension of partial matrices. (Russian) 85c:15004
- The problem of extension with the smallest possible rank of a partial matrix and its application to the theory of linear automata. (Russian) 85i:15005
- Lloyd, Sherrienne See Atkinson, M. D., 85a:15001
- Okoh, Frank (with Zorsitto, Frank A.) Subsystems of the polynomial system. 85f:15001
- Pickert, Günter Comments on: "On the absence of zero divisors in vector spaces" [Praxis Math. 25 (1983), no. 4, 105-114] by D. Rüdthing. (German) 85j:15003
- Zum Beweis von "oder"-Aussagen. [On the proof of "or" statements] 85j:15004
- Pullman, Norman J. See Beasley, LeRoy B., 85i:15004
- Rodman, L. Maximal invariant neutral subspaces and an application to the algebraic Riccati equation. 85a:15002
- Rüdthing, Dieter Über die Nullteilerfreiheit in Vektorräumen. [On the absence of zero divisors in vector spaces] 85j:15002
- See also Pickert, Günter, 85j:15003
- Shuperman, L. B. Partial projectivities of vector spaces and their semigroups. (Russian) 85j:15005
- Torgaev, Aleksandar Note on Gram determinant in Wachs spaces. 85b:15002
- Tu, Bo Xun A lower bound for the rank of a matrix and sufficient conditions for nonsingularity of a matrix. I. (Chinese. English summary) 85d:15001
- Zorsitto, Frank A. See Okoh, Frank, 85i:15001

## secondary classifications (15A03)

- Atkinson, M. D. (with Westwick, R.) Spaces of linear transformations of equal rank. 85i:15014
- Barris, José (with Halmos, Paul R.) Weakly transitive matrices. 85i:15018
- Brown, Thomas Craig (with Buhler, J. P.) Behrend's theorem for dense subsets of finite vector spaces. 85d:05067
- Buhler, J. P. See Brown, Thomas Craig, 85d:05067
- Greville, T. N. E. Toeplitz matrices with Toeplitz inverses revisited. 85g:15009
- Gulchard, David R. A note on  $r$ -maximal subspaces of  $V_{00}$ . 85j:03075
- Halmos, Paul R. See Barris, José, 85i:15018
- Häselbarth, Werner Orthogonal decompositions of certain finite-dimensional vector spaces. 85d:05030
- Heden, Olof The Frobenius number and partitions of a finite vector space. 85i:05020
- Hirasawa, Yoshihiko On the construction of linearly independent vectors with variable components. 85d:15026
- King, Oliver H. Imprimitive maximal subgroups of the orthogonal, special orthogonal, unitary and special unitary groups. 85d:20036
- Korte, Bernhard (with Lovász, L.) Structural properties of greedoids. 85b:05056
- Krynicky, Michal (with Lachlan, A. H.; Väänänen, Jouko) Vector spaces and binary quantifiers. 85d:03077
- Lachlan, A. H. See Krynicky, Michal; et al., 85d:03077
- Longstaff, W. E. Picturing the lattice of invariant subspaces of a nilpotent complex matrix. 85d:47006
- Lovász, L. See Korte, Bernhard, 85b:05056
- Nijenhuis, Albert (with Solow, Anita E.; Wilf, Herbert S.) Bijective methods in the theory of finite vector spaces. 85i:15028
- Solow, Anita E. See Nijenhuis, Albert; et al., 85i:15028
- Taguchi, Yoshiko Finite dimensional ranked vector spaces. 85e:46008
- Väänänen, Jouko See Krynicky, Michal; et al., 85d:03077
- Westwick, R. See Atkinson, M. D., 85i:15014
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## 15A04 Linear transformations, semilinear transformations

- Babaev, E. A. See Feisullaev, R. B.; et al., 85d:15002
- Berman, Abraham (with Hershkowitz, Daniel; Johnson, Charles R.) Linear transformations which preserve certain positivity classes of matrices. 85k:15001
- Feisullaev, R. B. (with Makhmudov, A. A.; Babaev, E. A.) Elimination of the strictness condition for isomorphisms between semiheaps of linear operators. (Russian. English and Azerbaijani summaries) 85d:15002
- Gasca, Mariano (with Lisbona, Francisco) On the approximation of linear forms. (Spanish. English summary) (See 85g:00026)
- Hershkowitz, Daniel See Berman, Abraham; et al., 85k:15001
- Ionin, V. K. (with Suleimenov, E. K.) Characterization of vector structures by linear mappings. (Russian) 85a:15003
- Johnson, Charles R. See Berman, Abraham; et al., 85k:15001
- Lisbona, Francisco See Gasca, Mariano, (85g:00026)
- Makhmudov, A. A. See Feisullaev, R. B.; et al., 85d:15002
- Neudecker, H. On Jacobians of transformations with skew-symmetric, strictly (lower) triangular or diagonal matrix arguments. 85c:15005
- Radjavi, Heydar Commutativity-preserving operators on symmetric matrices. 85b:15007
- Richter, Gotthard Lineare Bildtransformation. [Linear image transformation] (See 85j:66002)
- Suleimenov, E. K. See Ionin, V. K., 85a:15003
- Zah, Stanislaw Central affine mappings of the linear space  $\text{End } V^n$  of linear mappings  $V^n \rightarrow V^n$ . 85d:15003
- Zick, Wolfgang Lineare Abbildungen in reellen Vektorräumen. [Linear mappings in real vector spaces] 85e:15001

## secondary classifications (15A04)

- Albano, C. Four-parameter subgroups of the triangular group of the projective space  $P_3$ . (Italian. French summary) 85g:53011a

- D'Andrea, Antonina (with Utano, Rosanna) Subgroups of one, two, and three parameters of the triangular group in the projective space  $P_3$ . (Italian) **85g:53011c**
- Eilers, E. W. Factorization of isometries in  $O^+$  into half-turns. **85a:15014**
- Greco, Angela Five-parameter subgroups of the triangular group of the projective space  $P_3$ . (Italian. French summary) **85g:53011b**
- Hadwin, Don Algebraically reflexive linear transformations. **85e:47003**
- Hertz, David (with Zeheb, E.) A general property of the transformation matrices associated with the  $n$ -variable bilinear transformation. **85e:15033**
- Lebow, A. (with Schreiber, Morris) On the regular representation of a function field. **85e:12005**
- Schreiber, Morris See Lebow, A., **85e:12005**
- Utano, Rosanna See D'Andrea, Antonina, **85g:53011c**
- Zeheb, E. See Hertz, David, **85e:15033**
- Zhang, Yao Ting Matrix differentials—a tool for deriving exact distributions. (Chinese. English summary) **85g:62008**

## 15A06 Linear equations

- Abian, Alexander (with Esami, Esfandiar) Solvability of infinite systems of infinite linear equations. **85e:15002**
- Some properties of row orthonormal infinite square matrices and solvability of infinite systems of infinite linear equations. **85g:15006**
- Compactness of the product topology and the solvability of infinite systems of infinite linear equations. **85e:15007**
- A solvable case of an infinite system of infinite linear equations and two examples of applications. **85a:15004**
- De Malafosse, Bruno Résolution des systèmes linéaires infinis et variation d'un élément dans une matrice infinie. [Solution of infinite linear systems and variation of one element in an infinite matrix] **85h:15008**
- Esami, Esfandiar See Abian, Alexander, **85e:15002**
- Jain, Sunder Kumar Linear systems having nonnegative best approximate solutions—a survey. **85k:15002**
- Overdetermined linear systems satisfying nonnegativity constraints. **85e:15006**
- Kartick, D. L. Chebyshev points of the system  $a(nP - E)x = d$ . (Macedonian. English summary) **85g:15008**
- Kurtakov, K. Sh. Solution of linear systems of algebraic equations with minimal cubic norm. (Russian. Tajiki summary) **85b:15003**
- Malashonok, G. I. Solution of a system of linear equations in an integral ring. (Russian) **85e:15003**
- Purdy, G. B. A binary algorithm for solving  $n$  by  $n$  systems of integer equations. **85b:15004**
- Tuniev, A. D. A generalized partial-normal solution and its properties. (Russian. Armenian summary) **85b:15005**

## secondary classifications (15A06)

- Abian, Alexander Row orthonormal infinite square matrices. **85e:47013**
- Dorofeev, I. F. (with Lovetaki, K. P.) An iterative method of solution of degenerate systems of linear equations using Nash equilibrium points. (Russian) **85f:65031**
- Kannan, Ravindran Solving systems of linear equations over polynomials. **85h:65008**
- Lovetaki, K. P. See Dorofeev, I. F., **85f:65031**
- Narang, Asha Arithmetic of matrices over Dedekind domains. **85h:11010**
- Opfer, Gerhard (with Schober, Glenn) Richardson's iteration for nonsymmetric matrices. **85h:65073**
- Schober, Glenn See Opfer, Gerhard, **85h:65073**
- Wachnicki, Eugenius On a nonhomogeneous iterated linear equation. **85j:39008**

## 15A09 Matrix inversion, generalized inverses

- Barnett, S. See Gover, M. J. C., **85e:15006**
- Berg, L. Über eine Folge von Hessenbergmatrizen aus Binomialkoeffizienten. [On a sequence of Hessenberg matrices from binomial coefficients] **85e:15007**
- Die Invertierung von Matrizen aus Binomialkoeffizienten. [Inversion of matrices from binomial coefficients] **85h:15009**
- Asymptotische Abschätzung der Inversen Toeplitzscher Bandmatrizen im Grenzfalle. (English and Russian summaries) [Asymptotic estimate of the inverses of Toeplitz band matrices in the limit case] **85e:15004**
- Bruschl, M. (with Ragnisco, O.) On the inversion of the commutation operator. **85a:15006**
- Cambini, Alberto An explicit form of the inverse of a particular circulant matrix. **85f:15002**
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- Zabavskii, B. V. Inequalities for the Weyr characteristic of modules. (See 85g:15005)
- Zabavskii, B. V. (with Kazimír'skii, P. S.) Reduction of a pair of matrices over an adequate ring to a special triangular form using identical one-sided transformations. (Russian) 85c:15021
- Zassenhaus, Hans J. See Djoković, Dragomir; et al., 85g:15018
- Zheng, Quan Shui (with Dai, Tian Min) Two simple proofs of Cayley-Hamilton theorem and two representation theorems. 85g:15019
- Zhou, Yong Pei An alternative proof of the Jordan canonical form theorem. (Chinese) 85a:15013
- secondary classifications (15A21)
- Beck, Josef (with Spencer, Joel) Balancing matrices with line shifts. 85k:05026
- (Davis, Chandler) See Markus, A. S., 85d:47018
- Du, Zang See Shen, Qi Jun, 85c:65016
- Fiala, Tibor Unitary Jacobi-method for the eigenvalue problem of an arbitrary normal matrix. 85b:65079
- George, Alan (with Liu, Joseph W. H.; Ng, Esmond) Row-ordering schemes for sparse Givens transformations. I. Bipartite graph model. 85b:65084
- Keef, Patrick W. On the  $S$ -equivalence of some general sets of matrices. 85d:57019
- Leal Duarte, António Some problems of the existence of matrices with prescribed singular values. (Portuguese. English summary) 85j:15010
- Li, Tian Lin The inverse matrices and the decomposition theorem of cyclic matrices. (Chinese. English summary) 85g:15010
- Liu, Joseph W. H. See George, Alan; et al., 85b:65084
- Markus, A. S. (with Parilis, E. E.) The change of the Jordan structure of a matrix under small perturbations. 85d:47018
- Meřnik, O. M. On the similarity of matrix polynomials. (Russian) 85i:15037
- Narang, Aha Arithmetic of matrices over Dedekind domains. 85h:11010

- Nechaev, A. A. Similarity of matrices over a commutative local Artinian ring. (Russian. English summary) **85i:15037**  
 Ng, Edmund See George, Alan; et al., **85h:05084**  
 Parilla, E. E. See Markus, A. S., **85d:47018**  
 Shen, Qi Jun (with Du, Zang) An algorithm for determining the Jordan canonical form of a real unsymmetric matrix. (Chinese. English summary) **85e:65016**  
 Spencer, Joel See Beck, Jossif, **85k:05026**  
 Wimmer, Harald K. Indefinite inner-product spaces associated with Hermitian polynomial matrices. **85d:15027**  
 Zvyagina, R. A. Detection of a well-conditioned block in a rectangular matrix. (Russian) **85i:65055**

## 15A22 Matrix pencils

- Beauwens, Robert Upper eigenvalue bounds for pencils of matrices. **85i:15020**  
 Cao, Zhi Hao A note on reordering generalized eigenvalues of a real matrix pencil. (Chinese. English summary) **85i:15016**  
 Demirekler, Mübeccel See Kocaoglan, Erol, **85h:15015**  
 Kocaoglan, Erol (with Demirekler, Mübeccel) On a property of pencils of matrices. **85h:15015**  
 Laffey, Thomas J. A counterexample to Kippenhahn's conjecture on Hermitian pencils. **85d:15013b**  
 Waterhouse, William C. A conjectured property of Hermitian pencils. **85d:15013a**

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- Beju, I. (with Soles, E.; Teodorescu, P. P.) ★ Euclidean tensor calculus with applications. **85f:53001a**  
 (Samuel, Joseph) See Beju, I.; et al., **85f:53001a**  
 Soles, E. See Beju, I.; et al., **85f:53001a**  
 Teodorescu, P. P. See Beju, I.; et al., **85f:53001a**

## 15A23 Factorization of matrices

- Borwein, J. M. (with Richmond, L. B.) How many matrices have roots? **85j:15012**  
 Cohen, Nir Spectral analysis of regular matrix polynomials. **85f:15011**  
 De Santis, Romano M. (with Porter, William A.) A constrained matrix factorization problem. **85h:15016**  
 Djoković, Dragomir Characterization of dilatations which are expressible as a product of three transvections or three reflections. **85m:15006**  
 Ellers, E. W. Factorization of isometries in  $O^+$  into half-turns. **85a:15014**  
 Favier, Gérard Quelques rappels sur les décompositions de matrices. (English summary) [A review of matrix decompositions] (See **85m:93002**)  
 Hannah, John (with Laffey, Thomas J.) Nonnegative factorization of completely positive matrices. **85d:15014**  
 Hatakeyama, Yoji On the polar representation of regular matrices. **85d:15015**  
 Jeter, Mervyn W. (with Pye, W. C.) Some duality theorems for nonnegative rank factorizations. **85a:15015**  
 Jones, D. S. Commutative Wiener-Hopf factorization of a matrix. **85h:15017**  
 Laffey, Thomas J. See Hannah, John, **85d:15014**  
 Mehrmann, Volker On the LU decomposition of V-matrices. **85m:15007**  
 Nechepurenko, Yu. M. A factorization of elements of an inverse matrix. (Russian) **85e:15019**  
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 Pye, W. C. See Jeter, Mervyn W., **85a:15015**  
 Richmond, L. B. See Borwein, J. M., **85j:15012**  
 Rivzi, S. A. H. (with Singh, Vishwa Nath) Elementary matrices and Crout reduction. **85j:15013**  
 Sheng, De Cheng The method of orthogonalization by matrices. (Chinese. English summary) **85f:15012**  
 Singh, Vishwa Nath See Rivzi, S. A. H., **85j:15013**  
 Sweet, D. R. Fast Toeplitz orthogonalization. **85a:15016**  
 Williams, W. E. Recognition of some readily "Wiener-Hopf" factorizable matrices. **85i:15021**

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- Chan, Tony F. On the existence and computation of LU-factorizations with small pivots. **85i:65037**  
 Cohen, Nir On minimal factorizations of rational matrix functions. **85e:47018**  
 Cortés, Joaquín See Puschmann, Heinrich, **85a:65052**  
 Dahlquist, Germund G. On matrix majorants and minorants, with applications to differential equations. **85b:15025**  
 Fuhrmann, Paul A. On symmetric rational transfer functions. **85e:93013**  
 Gohberg, Israel (with Lerer, L.; Rodman, L.) Wiener-Hopf factorization of piecewise matrix polynomials. **85d:15016**  
 Hoskins, J. A. (with Hoskins, W. D.) A faster algorithm for factoring binary matrices. **85e:05011**  
 Hoskins, W. D. See Hoskins, J. A., **85e:05011**  
 Jones, D. S. Factorization of a Wiener-Hopf matrix. **85j:45012**  
 Kunze, M. Some remarks on linear mappings in cryptography. **85d:88020**  
 Lerer, L. See Gohberg, Israel; et al., **85d:15016**  
 Meinardus, G. Faktorisierung linearer Differenzgleichungen mit Anwendungen auf Matrizen. [Factorization of linear difference equations with applications to matrices] **85a:39002**  
 Puschmann, Heinrich (with Cortés, Joaquín) The coordinex problem and its relation to the conjecture of Wilkinson. **85a:65052**  
 Rodman, L. See Gohberg, Israel; et al., **85d:15016**  
 Smith, Philip W. Truncation and factorization of bi-infinite matrices. **85h:65025**  
 Vargas, Luis G. Analysis of sensitivity of reciprocal matrices. **85d:15010**  
 Zijm, W. H. M. Generalized eigenvectors and sets of nonnegative matrices. **85f:15018**  
 Znojil, M. The recursion method of a linear operator inversion. III. **85g:81075**

## 15A24 Matrix equations and identities

- Bakalary, Jerzy K. The pair of matrix equations  $AX = B$  and  $A^*Y + CX = D$ . (Italian summary) **85c:15022**  
 Bar-Ness, Y. See Feinstein, J., **85g:15020**  
 Boyarinsev, Yu. E. The solving pair of matrices and its application. (Russian) **85f:15013**  
 Bruschi, M. (with Ragnisco, O.) On the solution of a linear matrix equation. **85k:15011**  
 Dragomir, A. (with Dragomir, P.) Complete systems of subspaces. **85h:15018**  
 Dragomir, P. See Dragomir, A., **85h:15018**  
 Feinstein, J. (with Bar-Ness, Y.) The solution of the matrix polynomial equation  $A(s)X(s) + B(s)Y(s) = C(s)$ . **85g:15020**  
 Gohberg, Israel (with Lerer, L.; Rodman, L.) Wiener-Hopf factorization of piecewise matrix polynomials. **85d:15016**  
 Greenberg, Marvin Jay Note on the Cayley-Hamilton theorem. **85c:15023**  
 Heading, John Invariant functions of the elements of the powers of a square matrix. **85b:15017**  
 Jones, John, Jr. (with Martin, Charles R.; Udem, Halvor A.) Solutions of higher-order Riccati-type matrix equations. **85i:15022**  
 Khatri, C. G. A theorem on the decomposition of matrices. **85c:15024**  
 Khusainov, D. Ya. (with Yun'kova, E. A.) A method of determining the solution of the Lyapunov equation with a given spectrum. (Russian) **85j:15014**  
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 Magnus, Jan E. L-structured matrices and linear matrix equations. **85d:15017**  
 Martin, Charles R. See Jones, John, Jr.; et al., **85i:15022**  
 Petrichovich, V. M. (with Prokip, V. M.) Common divisors of matrix polynomials. (Russian) **85i:15024**  
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 Tannenbaum, Allen On the stabilizer subgroup of a pair of matrices. **85d:15018**  
 Tu, Bo Xun (with Li, Jun Ru) Lyapunov's second method and the matrix equation  $AX + XB^T = C$ . I. (Chinese) **85k:15012**  
 Udem, Halvor A. See Jones, John, Jr.; et al., **85i:15022**  
 Wimmer, Harald K. The algebraic Riccati equation: conditions for the existence and uniqueness of solutions. **85g:15021**  
 Xu, Wen Yuan Solutions for a class of convolution matrix equations. (Chinese) (Not in MR)  
 Yun'kova, E. A. See Khusainov, D. Ya., **85j:15014**

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- Abramov, A. A. Numerical solution of certain algebraic problems arising in the theory of stability. (Russian) **85k:34112**  
 Berenstein, Carlos A. (with Struppa, Daniele Carlo) On explicit solutions to the Bezout equation. **85c:15032**  
 Bresinski, Claude Some determinantal identities in a vector space, with applications. **85m:15004**  
 Brierley, S. D. (with Lee, E. Bruce) The solution of a new type of matrix quadratic equation. **85h:93023**  
 Bruschi, M. (with Ragnisco, O.) On the inversion of the commutation operator. **85a:15005**  
 Callies, Francis The analytical solution of the additive constant problem. **85e:62219**  
 Carlson, David H. (with Datta, Biswa Nath; Schneider, Hans) On the controllability of matrix pairs  $(A, K)$  with  $K$  positive semidefinite. **85g:93014**  
 Clancey, K. F. (with Kon, B. A.) The Bezoutian and the algebraic Riccati equation. **85g:47038**  
 Datta, Biswa Nath Generalized Hankel matrices of Markov parameters and their applications to control problems. **85m:15013**  
 See also Carlson, David H.; et al., **85g:93014**  
 Derese, I. A. See Mori, Takehiro, **85a:93034**  
 Fiedler, Miroslav Binomial matrices. (Russian summary) **85d:15020**  
 Gocheva, S. G. (with Volkov, L. G.) A direct method of solution of linear systems of two matrix equations with band matrices. (Russian) **85h:65006**  
 Halpin, Patrick Central and weak identities for matrices. **85b:16014**  
 Hansen, D. J. Cauchy's multiplicative functional equation in the semigroup of Boolean matrices. **85i:15026**  
 Incertis Carro, Fernando C. A skew-symmetric formulation of the algebraic Riccati equation problem. **85k:93019**  
 Jonckheere, Edmond A. New bound on the sensitivity of the solution of the Lyapunov equation. **85j:93040**  
 Jones, John, Jr. Matrix equations over rings. **85b:15030**  
 Kon, B. A. See Clancey, K. F., **85g:47038**  
 Lee, E. Bruce See Brierley, S. D., **85h:93023**  
 Masko, A. G. Distribution of the spectrum of a matrix with respect to given sets in the complex plane. (Russian) **85k:15009**  
 Mori, Takehiro (with Derese, I. A.) A brief summary of the bounds on the solution of the algebraic matrix equations in control theory. **85a:93034**  
 Nguyễn Văn Mậu Characterization of polynomials in algebraic operators with constant coefficients. **85d:47022**  
 Ragnisco, O. See Bruschi, M., **85a:15005**  
 Rodman, L. Maximal invariant neutral subspaces and an application to the algebraic Riccati equation. **85a:15002**  
 Rush, David E. The equation  $X^k + Y^k = Z^k$  in commuting rational matrices. **85c:11025**  
 Schneider, Hans See Carlson, David H.; et al., **85g:93014**  
 Struppa, Daniele Carlo See Berenstein, Carlos A., **85c:15032**  
 Sun, Jia Chang An identity for tridiagonal determinants and its applications. (Chinese. English summary) **85h:15013**



- Veln, P. R. Perysymmetric determinants. V. Families of overlapping coaxial equivalent determinants. 85e:15011
- Volkov, L. G. See Gocheva, S. G., 85h:45095
- Ziętak, Krystyna The  $L_p$ -solution of the linear matrix equation  $AX + YB = C$ . (German summary) 85m:45030

## 15A27 Commutativity

- Vagabov, A. I. (with Zelmanov, B. A.) Centralizers in matrix rings. (Russian) 85e:15020
- Zelmanov, B. A. See Vagabov, A. I., 85e:15020

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- Bruschl, M. (with Ragnisco, O.) On the inversion of the commutation operator. 85a:15005
- Ragnisco, O. See Bruschl, M., 85a:15005

## 15A30 Algebraic systems of matrices [See also 16A42, 20Gxx, 20Hxx.]

- Atkinson, M. D. (with Westwick, R.) Spaces of linear transformations of equal rank. 85f:15014
- Biacarini, Paola Cyclic symmetric matrices, applications to the theory of  $n$ -gons. (Italian. English summary) 85d:15019
- Dowdy, James E. See Kim, Jin Bai, 85e:15021
- Khlebnitsin, S. G. Sufficient conditions for normality of a subgroup of elementary matrices. (Russian) 85j:15015
- Kim, Jin Bai (with Dowdy, James E.) On  $N$ -dimensional idempotent matrices. 85e:15021
- Laffey, Thomas J. Irredundant generating sets for matrix algebras. 85a:15017
- Pas, Assia An application of the Cayley-Hamilton theorem to matrix polynomials in several variables. 85h:15019
- Westwick, R. See Atkinson, M. D., 85f:15014

## secondary classifications (15A30)

- Abian, Alexander Some properties of row orthonormal infinite square matrices and solvability of infinite systems of infinite linear equations. 85g:15006
- Bose, N. K. See Guiver, John P., 85j:12005
- Cheng, Charles Ching-an Separable semigroup algebras. 85k:16010
- Drenski, V. S. (with Kasparian, A. K.) Some polynomial identities of matrix algebras. 85e:16035
- Feinsilver, Philip Circulants, inversion of circulants, and some related matrix algebras. 85e:15005
- Guiver, John P. (with Bose, N. K.) Polynomial matrix primitive factorization over arbitrary coefficient field and related results. 85j:12005
- Hegedűs, Gábor Extremal algebra. (Hungarian. Russian summary) 85d:90080
- Huang, Yu Automorphisms of a class of semigroups of matrices with integer coefficients. (Chinese) 85c:15027
- Kasparian, A. K. See Drenski, V. S., 85e:16035
- Laffey, Thomas J. A characterisation of full matrix algebras. 85i:16022
- Marmaridis, Nikolaos Comma categories in representation theory. 85g:16016
- On the representation type of certain triangular matrix algebras. 85g:16017
- Mulerone, Thomas Remarks on two-by-two matrix semigroups. (See 85i:00007)
- Purdy, G. B. A binary algorithm for solving  $n$  by  $n$  systems of integer equations. 85b:15004
- Putcha, Mohan S. Determinant functions on algebraic monoids. 85c:20038

## 15A33 Matrices over special rings (quaternions, finite fields, etc.)

- Gustafson, William H. A note on matrix inversion. 85i:15025
- Hansen, D. J. Cauchy's multiplicative functional equation in the semigroup of Boolean matrices. 85i:15026
- Hyodo, Yoshifumi See Yamamoto, Sumiyasu, 85k:15014
- Laffey, Thomas J. Products of idempotent matrices. 85f:15015
- Lee, Anna On  $s$ -symmetric matrices over a field  $F$  of characteristic different from two. 85k:15013
- McDonald, Bernard R.  $R$ -linear endomorphisms of  $(R)_n$  preserving invariants. 85c:15025
- Nechaev, A. A. Similarity of matrices over a commutative local Artinian ring. (Russian. English summary) 85i:15027
- Nijenhuis, Albert (with Solow, Anita E.; Wilf, Herbert S.) Bijective methods in the theory of finite vector spaces. 85i:15028
- Solow, Anita E. See Nijenhuis, Albert; et al., 85i:15028
- Wilf, Herbert S. See Nijenhuis, Albert; et al., 85i:15028
- Yamamoto, Sumiyasu (with Hyodo, Yoshifumi) An extension of the concept of similarity preserved in the composition process of experimental designs. 85k:15014

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- Al'pin, Yu. A. See Kochkarev, B. S., 85g:05044
- Beasley, LeRoy B. (with Pullman, Norman J.) Boolean-rank-preserving operators and Boolean-rank-1 spaces. 85i:15004
- Djoković, Dragomir Characterization of dilatations which are expressible as a product of three transvections or three reflections. 85m:15006
- Gerth, Frank, III An application of matrices over finite fields to algebraic number theory. 85b:11094
- Hall, Frank J. (with Hartwig, Robert E.; Katz, Irving J.; Newman, Morris) Pseudo-similarity and partial unit regularity. 85c:15019
- Hartwig, Robert E. See Hall, Frank J.; et al., 85c:15019
- Hoskins, J. A. (with Hoskins, W. D.) A faster algorithm for factoring binary matrices. 85c:05011
- Hoskins, W. D. See Hoskins, J. A., 85c:05011
- Katz, Irving J. See Hall, Frank J.; et al., 85c:15019

- Kasim'ir'skii, P. S. See Zabavskii, B. V., 85c:15021
- Kochkarev, B. S. (with Al'pin, Yu. A.) Some typical properties of Boolean matrices. (Russian) 85g:05044
- Narang, Asha Arithmetic of matrices over Dedekind domains. 85h:11010
- Newman, Morris See Hall, Frank J.; et al., 85c:15019
- Pullman, Norman J. See Beasley, LeRoy B., 85i:15004
- Puystjens, R. Moore-Penrose inverses for matrices over some Noetherian rings. 85c:15009
- Queiró, João Filipe Invariant factors as approximation numbers. 85b:15019
- Singh, S. Nabachandra Transvection equivalent to irreducible matrices and its application to generalized inverses of matrices over division ring. 85b:15007
- Zabavskii, B. V. (with Kasim'ir'skii, P. S.) Reduction of a pair of matrices over an adequate ring to a special triangular form using identical one-sided transformations. (Russian) 85c:15021

## 15A36 Matrices of integers [See also 11C20.]

- Du, Qiang Calculating a class of determinants. (Chinese) 85c:15026
- Huang, Yu Automorphisms of a class of semigroups of matrices with integer coefficients. (Chinese) 85c:15027
- Kowalsky, Hans-Joachim Ganzzahlige Matrizen mit ganzzahligen Eigenwerten. [Integral matrices with integral eigenvalues] 85b:15018
- Meenakshi, Ar. On integral EP<sub>r</sub> matrices. 85d:15020
- Queiró, João Filipe Invariant factors as approximation numbers. 85b:15019

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- Anstee, R. P. Properties of a class of  $(0, 1)$ -matrices covering a given matrix. 85c:05010
- Berg, L. Über eine Folge von Hessenbergmatrizen aus Binomialkoeffizienten. [On a sequence of Hessenberg matrices from binomial coefficients] 85c:15007
- Bevis, Jean H. (with Hall, Frank J.) Monotonicity of integral matrices. 85c:15034
- Cambini, Alberto An explicit form of the inverse of a particular circulant matrix. 85f:15002
- Carlson, David H. (with de Sá, Eduardo Marques) Generalized minimax and interlacing theorems. 85a:15018
- Er, M. C. Sums of Fibonacci numbers by matrix methods. 85m:11010
- Givens, Clark R. Some observations on eigenvectors of Hadamard matrices of order  $2^n$ . 85g:15016
- Hall, Frank J. See Bevis, Jean H., 85c:15034
- Krätzer, Arnold R. (with Seifter, Norbert) Some properties of the permanent of  $(1, -1)$ -matrices. 85j:15007
- Puystjens, R. (with Robinson, Donald W.) The Moore-Penrose inverse of a morphism in an additive category. 85i:16013
- Robinson, Donald W. See Puystjens, R., 85i:16013
- de Sá, Eduardo Marques See Carlson, David H., 85a:15018
- Seifter, Norbert See Krätzer, Arnold R., 85j:15007
- Springer, J. Die exakte Berechnung der Moore-Penrose-Inversen einer Matrix durch Residuendarithmetik. (English and Russian summaries) [The exact computation of the Moore-Penrose inverses of a matrix by residue arithmetic] 85b:15006
- Thompson, Robert C. Author vs. referee: a case history for middle level mathematicians. 85c:01072

## 15A39 Linear inequalities

- Monhor, D. Comment on the theorems of Farkas and Haar. 85d:15021

## secondary classifications (15A39)

- Cook, William (with Lovász, L.; Schrijver, A.) A polynomial-time test for total dual integrality in fixed dimension. 85m:90029
- Goberna, M. A. (with Lopez, Marco Antonio; Pastor Ciurana, Jesús; Vercher, E.) Alternative theorems for infinite systems with applications to semi-infinite games. 85m:90065
- Khatri, C. G. (with Rao, Calyampuli Radhakrishna) Some generalizations of Kantorovich inequality. 85m:15005
- Lopez, Marco Antonio See Goberna, M. A.; et al., 85m:90065
- Lovász, L. See Cook, William; et al., 85m:90029
- Mond, B. (with Parida, J.) On solvability of the complex linear complementarity problem. 85i:90138
- Parida, J. See Mond, B., 85i:90138
- Pastor Ciurana, Jesús See Goberna, M. A.; et al., 85m:90065
- Rao, Calyampuli Radhakrishna See Khatri, C. G., 85m:15005
- Schrijver, A. See Cook, William; et al., 85m:90029
- Vercher, E. See Goberna, M. A.; et al., 85m:90065

## 15A42 Inequalities involving eigenvalues and eigenvectors

- Bhatia, Rajendra (with Davis, Chandler) A bound for the spectral variation of a unitary operator. 85b:15020
- Carlson, David H. (with de Sá, Eduardo Marques) Generalized minimax and interlacing theorems. 85a:15018
- Davis, Chandler See Bhatia, Rajendra, 85b:15020
- Falk, S. Der Diagonalsatz, ein weitreichender Einschliessungssatz für die Eigenwerte beliebiger Matrizen. II. [The diagonal theorem, a far-reaching inclusion theorem for the eigenvalues of arbitrary matrices. II] 85g:15022
- Ein Einschließungssatz für die Eigenwerte eines Matrizenpaares mit Hilfe verschiedener Normen. [An inclusion theorem for the eigenvalues of a matrix pair by means of different norms] 85h:15020
- Hu, Hai Chang Extension of the Collatz inclusion theorem for algebraic eigenvalues. (Chinese. English summary) 85i:15029
- Ikebe, Yasuhiko (with Inagaki, Toshiyuki; Miyamoto, Sadaaki) Perturbation theorems for matrix eigenvalues. 85f:15016

- Inagaki, Toshiyuki. See Ikebe, Yasuhiko; et al., 85f:15016
- Jiang, Er Xiong. On spectral variation of a nonnormal matrix. 85b:15021
- Merikowski, Jorma Kaarlo. On the Rayleigh quotient of a nonnegative matrix. 85b:15022 (with Styan, George P. H.; Wolkowicz, Henry) Bounds for ratios of eigenvalues using traces. 85a:15019
- Miyamoto, Sadaaki. See Ikebe, Yasuhiko; et al., 85f:15016
- Mori, Takehiro. Note on the existence regions for eigenvalues of the solution to the discrete Lyapunov matrix equation. 85a:15020
- Neumaier, Arnold. Eigenwertabschätzungen für Matrizen. [Estimates of eigenvalues for matrices] 85m:15006
- de Sá, Eduardo Marques. See Carlson, David H., 85a:15018
- Solov'ev, V. N. Generalization of the Gershgorin theorem. (Russian) 85b:15023
- Styan, George P. H. See Merikowski, Jorma Kaarlo; et al., 85a:15019
- Sun, Ji Guang. The perturbation bounds of generalized eigenvalues of a class of matrix-pairs. (Chinese. English summary) 85b:15021
- Vitória, José. Bounds for the spectral radius of the inverse of a partitioned matrix. (See 85g:15005)
- Wang, Bo Ying. The bounds of minimum eigenvalue separation of some matrices. (Chinese. English summary) 85b:15024
- Wiener, Gerry. Spectral multiplicity and splitting results for a class of qualitative matrices. 85m:15009
- Wolkowicz, Henry. See Merikowski, Jorma Kaarlo; et al., 85a:15019
- Xu, Dao Yi. On the Routh-Hurwitz problem. (Chinese. English summary) 85k:15015

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- Atiyah, M. F. Angular momentum, convex polyhedra and algebraic geometry. 85a:58027
- Barmish, B. Ross. Invariance of the strict Hurwitz property for polynomials with perturbed coefficients. 85m:93026
- Beauwens, Robert. Upper eigenvalue bounds for pencils of matrices. 85i:15020
- Berman, Abraham. (with Herzkowitz, Daniel) Characterization of acyclic  $D$ -stable matrices. 85g:15015
- Bialas, S. Upper bounds for the abscissa of stability of a stable matrix. 85b:50077
- Costabile, C. (with Luceri, R.) Error estimates for zeros of polynomials. (Italian. English summary) 85d:33028
- Goldberg, Moshe. (with Straus, E. G.) On generalizations of the Perron-Frobenius theorem. 85d:15009
- Herzkowitz, Daniel. See Berman, Abraham, 85g:15015
- London, David. An inequality for the spectral norm of certain matrices. 85d:15032
- Luceri, R. See Costabile, C., 85d:33028
- Paulk, Augustin. Schur inequalities for the eigenvalues of Hilbert-Schmidt operators. 85c:47020
- Pták, Vlastimil. Universal estimates of the spectral radius. 85d:47004
- Qi, Li Qun. Some simple estimates for singular values of a matrix. 85e:15016
- Straus, E. G. See Goldberg, Moshe, 85d:15009
- Sun, Jia Chang. An identity for tridiagonal determinants and its applications. (Chinese. English summary) 85b:15013

## 15A45 Miscellaneous inequalities involving matrices

- Baksalary, Jerzy K. (with Kala, Radosław) Partial orderings between matrices one of which is of rank one. (Russian summary) 85j:15016 (with Kala, Radosław; Klaczyński, K.) The matrix inequality  $M \geq B^*MB$ . 85b:15022
- Dahlquist, Germund G. On matrix majorants and minorants, with applications to differential equations. 85b:15025
- Feng, Ci Huang. A note on some inequalities. (Chinese. English summary) 85i:15030
- Kala, Radosław. See Baksalary, Jerzy K.; et al., 85b:15022 and 85j:15016
- Kankaanpää, Hilikka. (with Merikowski, Jorma Kaarlo) On a conjecture of D. London. 85i:15031
- Kirov, G. Kh. (with Petkov, Milko G.) Some properties of matrices with a weakly dominating diagonal. (Bulgarian. English summary) 85e:15022
- Klaczyński, K. See Baksalary, Jerzy K.; et al., 85b:15022
- Malosémov, V. N. Strengthening of the Cauchy inequality. (Russian. English summary) 85j:15017
- Merikowski, Jorma Kaarlo. See Kankaanpää, Hilikka, 85i:15031
- Olkin, Ingram. An inequality for a sum of forms. 85d:15022
- Pate, Thomas H. An inequality involving permanents of certain direct products. 85i:15032
- Petkov, Milko G. See Kirov, G. Kh., 85e:15022
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- Ando, Tsuyoshi. An inequality between symmetric function means of positive operators. 85b:47014
- Artzrouni, Marc. A theorem on products of matrices. 85k:15019
- Bialas, S. (with Garloff, J.) Intervals of  $P$ -matrices and related matrices. 85c:15028
- Derece, I. A. See Mori, Takehiro, 85a:93034
- Dixon, John D. How good is Hadamard's inequality for determinants? 85e:15009
- Garloff, J. See Bialas, S., 85c:15028
- Gryn', V. I. Investigation of the stability of recursive determination of elements of a matrix generated by products of orthogonal polynomials. (Russian) 85d:65030
- Hu, Jia Gan. Estimates of  $\|B^{-1}A\|_\infty$  and their applications. (Chinese. English summary) 85h:65090
- Koza, Laszlo. Some norm-inequalities of the convolution for matrices. 85i:15042
- Luchter, Jan. Some inequalities concerning the volume measure of  $n$ -dimensional parallelepipeds. (Russian and Polish summaries) 85b:51040
- Mori, Takehiro. (with Derece, I. A.) A brief summary of the bounds on the solution of the algebraic matrix equations in control theory. 85a:93034

- Sles, H. Einige Eigenschaften monotoner Matrizen. (English summary) [Some properties of monotone matrices] 85f:15017a

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- Styan, George P. H. On some inequalities associated with ordinary least squares and the Kantorovich inequality. 85g:62120
- Thompson, Robert C. A converse to the Ostrowski-Taussky determinantal inequality. 85c:15010

## 15A48 Positive matrices and their generalizations; cones of matrices

- Ando, Tsuyoshi. ★ Totally positive matrices. 85i:15033
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- Barker, George Phillip. Problems in the theory and application of finite-dimensional cones. (See 85g:15005)
- (with Hill, Richard D.; Haertel, Raymond D.) On the completely positive and positive-semidefinite-preserving cones. 85b:15026
- Barozzi, Giulio Cesare. Elementary properties of nonnegative matrices. (See 85h:90002)
- Barrett, Wayne W. (with Johnson, Charles R.) Possible spectra of totally positive matrices. 85m:15010
- Berman, Abraham. See Herzkowitz, Daniel, 85c:15030
- Bialas, S. (with Garloff, J.) Intervals of  $P$ -matrices and related matrices. 85c:15028
- Chen, Gong Ning. Some generalizations of diagonal dominance associated with  $G$ -functions. 85c:15029
- Deutch, Emeric. (with Neumann, Michael) Derivatives of the Perron root at an essentially nonnegative matrix and the group inverse of an  $M$ -matrix. 85b:15023
- Fiedler, Miroslav. (with Schneider, Hans) Analytic functions of  $M$ -matrices and generalizations. 85b:15027
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- Haertel, Raymond D. See Barker, George Phillip; et al., 85b:15026
- Han, S. P. (with Mangasarian, O. L.) Conjugate cone characterization of positive definite and semidefinite matrices. 85e:15023
- Herzkowitz, Daniel. (with Berman, Abraham) Notes on  $\omega$ - and  $\tau$ -matrices. 85c:15030
- Hill, Richard D. See Barker, George Phillip; et al., 85b:15026
- Johnson, Charles R. See Barrett, Wayne W., 85m:15010
- Klyuñik, I. F. (with Obahta, A. F.) An effective test for positive definiteness of binary forms of arbitrary order for positive values of variables. (Russian) (Not in MR)
- Loewy, R. Determinants of nonprincipal submatrices of positive semidefinite matrices. 85b:15028
- Mangasarian, O. L. See Han, S. P., 85e:15023
- Mehrmann, Volker. On classes of matrices containing  $M$ -matrices and Hermitian positive semidefinite matrices. 85e:15024
- Milassewicz, J. P. On modified Jacobi linear operators. 85b:15024
- Mohan, Srinivasa Raghavan. (with Neumann, Michael; Ramamurthy, K. G.) Nonnegativity of principal minors of generalized inverses of  $M$ -matrices. 85k:15016
- Neumann, Michael. See Deutch, Emeric, 85b:15023 and Mohan, Srinivasa Raghavan; et al., 85k:15016
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- Sles, H. Einige Eigenschaften monotoner Matrizen. (English summary) [Some properties of monotone matrices] 85f:15017a
- Corrigenda: "Some properties of monotone matrices". (German) 85f:15017b
- Strang, Gilbert A. A negative result for nonnegative definite matrices. (Chinese. English summary) 85e:15025
- Tan, Choon Peng. See Rothblum, Uriel G., 85m:15011
- de Vos, Klaas. See Sierksma, Gerard, 85k:15017
- Zijm, W. H. M. Generalized eigenvectors and sets of nonnegative matrices. 85f:15018

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- Abian, Alexander. Two basic methods of compactification of dyadic matrices by row extension. 85d:05061
- Berman, Abraham. (with Herzkowitz, Daniel; Johnson, Charles R.) Linear transformations which preserve certain positivity classes of matrices. 85k:15001
- See also Herzkowitz, Daniel, 85e:15015
- Carlson, David H. (with Datta, Biswa Nath; Schneider, Hans) On the controllability of matrix pairs  $(A, K)$  with  $K$  positive semidefinite. 85g:93014
- Datta, Biswa Nath. See Carlson, David H.; et al., 85g:93014
- Deutch, Emeric. (with Wielandt, Helmut) Nested bounds for the Perron root of a nonnegative matrix. 85c:65039
- Han, S. P. (with Mangasarian, O. L.) Characterization of positive definite and semidefinite matrices via quadratic programming duality. 85c:90066
- Hannah, John. (with Laffey, Thomas J.) Nonnegative factorization of completely positive matrices. 85b:15014
- Hansen, Frank. Means and concave products of positive semidefinite matrices. 85b:47015
- Herzkowitz, Daniel. (with Berman, Abraham) Localization of the spectra of  $P$ - and  $P_0$ -matrices. 85e:15015
- See also Berman, Abraham; et al., 85k:15001
- Jeter, Melvyn W. (with Pye, W. C.) Some duality theorems for nonnegative rank factorizations. 85a:15015
- Johnson, Charles R. See Berman, Abraham; et al., 85k:15001
- Kohlberg, Elon. (with Neyman, Abraham) Convergence in Hilbert's metric and convergence in direction. 85e:40009

- Laffey, Thomas J. See Hannah, John, 85d:15014
- Levental', V. Ts. Mutual arrangement of polyhedral cones and related properties of symmetric matrices. (Russian) 85j:52006
- Mangasarajan, O. L. See Han, S. P., 85c:90066
- Mehrmann, Volker On the LU decomposition of V-matrices. 85m:15007
- Merikaki, Jorma Kaarlo On the Rayleigh quotient of a nonnegative matrix. 85b:15022
- Neyman, Abraham See Kohlberg, Elon, 85c:46006
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- Pye, W. C. See Jeter, Melvyn W., 85a:15015
- Romanov, L. I. Normality of a system of cones and positive solutions of linear equations. (Russian) 85j:46020
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- Schmid, Johannes The maximum modulus eigenvalues of certain nonnegative matrices under perturbation. 85b:15013
- Schneider, Hans See Carlson, David H.; et al., 85g:93014
- Seneta, E.  $\star$  Nonnegative matrices and Markov chains. 85i:60056
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- Alpera, Steve Rotational representations of stochastic matrices. 85a:15022
- Brualdi, Richard A. The doubly stochastic matrices of a vector majorization. 85i:15035
- Chang, Derek K. Notes on permanents of doubly stochastic matrices. 85f:15019
- Hartfiel, D. J. An ergodic result for the limit of a sequence of substochastic products  $zA_1 \cdots A_k$ . 85b:15025
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- Li, Jian Sheng Permanent pairs of doubly stochastic matrices. (Chinese) 85d:15034
- Marcus, Marvin (with Kidman, Kent; Sandy, Markus) Products of elementary doubly stochastic matrices. 85g:15025
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- Au-Yeung, Yik Hoi (with Tsing, Nam Kiu) An extension of the Hausdorff-Toeplitz theorem on the numerical range. 85f:15021
- Chang, Derek K. A note on a conjecture of M. Marcus and H. Minc. 85d:15005
- Minimum permanents of doubly stochastic matrices with one fixed entry. 85j:15006
- Galeone, Luciano The use of positive matrices for the analysis of the large time behavior of the numerical solution of reaction-diffusion systems. 85b:65066
- Gyires, B. On inequalities concerning the permanents of generalized doubly stochastic matrices. 85i:15009
- Li, Kuo Wei (with Wang, Edward T. H.) A convexity inequality on the permanent of doubly stochastic matrices. 85b:15011
- McAllister, D. F. (with Stewart, G. W.; Stewart, W. J.) On a Rayleigh-Ritz refinement technique for nearly uncoupled stochastic matrices. 85b:65062
- Minc, Henryk Minimum permanents of doubly stochastic matrices with prescribed zero entries. 85i:15011
- Seneta, E.  $\star$  Nonnegative matrices and Markov chains. 85i:60056
- Stewart, G. W. See McAllister, D. F.; et al., 85b:65062
- Stewart, W. J. See McAllister, D. F.; et al., 85b:65062
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- Gutiérrez, M. (with Mikhailov, I. D.) Eigenvalue distribution of the Jacobi matrix with two numbers located randomly on the principal diagonal. (Spanish. English summary) 85c:15031
- See also Mikhailov, I. D., 85b:15029
- Mikhailov, I. D. (with Gutiérrez, M.) Distribution of the eigenvalues of a Jacobian matrix of infinite order with random diagonal elements. (Spanish. English summary) 85b:15029
- See also Gutiérrez, M., 85c:15031
- Ye, Yin Yu Conclusions on the "missing numbers" in the ergodic exponents of  $s \times s$  random matrices. (Chinese. English summary) 85d:15025b
- Zhang, Zi Gang Structure of the "missing numbers" in the ergodic exponents of  $s \times s$  random matrices. (Chinese. English summary) 85d:15025a

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- Chalka, O. G. See Girko, V. L.; et al., 85k:60065
- Dixon, John D. How good is Hadamard's inequality for determinants? 85f:15009
- Girko, V. L. (with Kokobinadze, T. S.; Chalka, O. G.) Distribution of eigenvalues of Gaussian random matrices. (Russian) 85k:60065
- Juhász, Ferenc On the asymptotic behaviour of the spectra of nonsymmetric random  $(0, 1)$  matrices. 85b:05125
- Kokobinadze, T. S. See Girko, V. L.; et al., 85k:60065

- Molchanov, S. A. (with Tutubalin, V. N.) A linear model of a hydromagnetic dynamo, and products of random matrices. (Russian) 85m:85005
- Neudecker, H. (with Wansbeek, Tom) Some results on commutation matrices with statistical applications. 85b:15027
- Tutubalin, V. N. See Molchanov, S. A., 85m:85005
- Viriser, A. D. On the simplicity of the spectrum of characteristic Lyapunov exponents of the product of random matrices. (Russian. English summary) 85d:60026
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- Ahakarov, A. Sh. (with Yakovlev, A. V.) A theorem of Latsyshev. (Russian) 85f:15020
- Berenstein, Carlos A. (with Struppa, Daniele Carlo) On explicit solutions to the Bezout equation. 85c:15032
- Hirasawa, Yoshikazu On the construction of linearly independent vectors with variable components. 85d:15026
- Jones, John, Jr. Matrix equations over rings. 85b:15030
- Meľnik, O. M. On the similarity of matrix polynomials. (Russian) 85i:15037
- Petríkhovich, V. M. Linear divisors and reducibility of polynomial matrices. (Russian) 85c:15027
- Shieh, Leang S. See Tsay, Yih T., 85a:15023
- Stolca, Petre On full matrix fraction descriptions. (Romanian summary) 85b:15031
- Struppa, Daniele Carlo See Berenstein, Carlos A., 85c:15032
- Tsay, Yih T. (with Shieh, Leang S.) Some applications of rational matrices to problems in systems theory. 85a:15023
- Wimmer, Harald K. Indefinite inner-product spaces associated with Hermitian polynomial matrices. 85d:15027
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- Yakovlev, A. V. See Ahakarov, A. Sh., 85f:15020

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- Abul-Ez, M. A. See Sayyed, K. A. M., 85g:32001
- Clancey, K. F. (with Kon, B. A.) The Bezoutian and the algebraic Riccati equation. 85g:47038
- Cohen, Nir Spectral analysis of regular matrix polynomials. 85f:15011
- Delosme, Jean-Marc See Genin, Y.; et al., 85g:93024
- Genin, Y. (with Van Dooren, P.; Kailath, Tom; Delosme, Jean-Marc; Morf, Martin) On  $\Sigma$ -lossless transfer functions and related questions. 85g:93024
- Georgiou, Tryphon T. See Khargonekar, Pramod P.; et al., 85c:93031
- Jones, D. S. Factorization of a Wiener-Hopf matrix. 85j:45012
- Kailath, Tom See Genin, Y.; et al., 85g:93024
- Khargonekar, Pramod P. (with Georgiou, Tryphon T.; Özgüler, Bülent) Skew-prime polynomial matrices: the polynomial-model approach. 85c:93031
- Kon, B. A. See Clancey, K. F., 85g:47038
- Lee, E. Bruce See Žak, S. H., (Not in MR)
- Morf, Martin See Genin, Y.; et al., 85g:93024
- Özgüler, Bülent See Khargonekar, Pramod P.; et al., 85c:93031
- Papadimitriou, Christos H. On the symbolic evaluation of determinants. 85j:68054
- Petríkhovich, V. M. (with Prokip, V. M.) Common divisors of matrix polynomials. (Russian) 85i:15024
- Prokip, V. M. See Petríkhovich, V. M., 85i:15024
- Qi, Yin Feng See Tu, Feng Sheng, 85c:93033
- Sayyed, K. A. M. (with Abul-Ez, M. A.) Linear substitution for functions and sets of polynomials of two complex matrices. (Arabic summary) 85g:32001
- Schmitt, Bernhard A. Norm bounds for rational matrix functions. 85f:65038
- Shavarovskii, B. Z. Semiscalar equivalence of polynomial matrices with pairwise distinct roots of their characteristic polynomial. (Russian) 85j:15011
- Tu, Feng Sheng (with Qi, Yin Feng) External skew prime polynomial matrices and the output regulation problem. (Chinese) 85c:93033
- Van Dooren, P. See Genin, Y.; et al., 85g:93024
- Žak, S. H. (with Lee, E. Bruce) The simplified derivation of the completion theorem to a unimodular matrix over  $R_{[1, 2]}$ . (Not in MR)

## 15A57 Other types of matrices (Hermitian, skew-Hermitian, etc.)

- Ballantine, C. S. (with Loewy, R.) Self-duality results for unitary and Hermitian matrices. 85a:15024
- Barnett, S. (with Gover, M. J. C.) Some extensions of Hankel and Toeplitz matrices. 85d:15028
- Barrett, Wayne W. Toeplitz matrices with banded inverses. 85i:15038
- Benedetti, R. (with Cragolini, P.) On simultaneous diagonalization of one Hermitian and one symmetric form. 85c:15033
- Berman, Abraham Stable acyclic matrices. (See 85g:15006)
- Bevis, Jean H. (with Hall, Frank J.) Monotonicity of integral matrices. 85c:15034
- Bulavskii, V. A. (with Yakovleva, M. A.) Generalized tridiagonal matrices and Sturm's theorem. (Russian) 85c:15035
- Carlson, David H. Controllability, inertia, and stability for tridiagonal matrices. 85g:15026
- Cragolini, P. See Benedetti, R., 85c:15033
- Cybenko, George Moment problems and low rank Toeplitz approximations. 85c:15036
- Datta, Biswa Nath Generalized Hankel matrices of Markov parameters and their applications to control problems. 85m:15013
- Dragan, Ya. P. Circulant matrices—models of discrete invariant systems. (Russian) 85k:15018
- Fiedler, Miroslav S-matrices. 85c:15037
- Hankel and Loewner matrices. 85g:15027
- Binomial matrices. (Russian summary) 85d:15029
- Gover, M. J. C. See Barnett, S., 85d:15028
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- Hartwig, Robert E. (with Spindelböck, Klaus) Matrices for which  $A^*$  and  $A^\dagger$  commute. 85d:15030
- Heinig, G. Inversion of Toeplitz and Hankel matrices with singular sections. (German summary) 85g:15028
- Hochstadt, Harry An inverse spectral theorem for a Hill's matrix. 85c:15038
- Hsu, Liu See Kaszkurewicz, E., 85g:15029
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- Berg, L. Asymptotische Abschätzung der Inversen Toeplitzischer Bandmatrizen im Grenzfalle. (English and Russian summaries) [Asymptotic estimate of the inverses of Toeplitz band matrices in the limit case] 85c:15004
- Berman, Abraham See Hershkovits, Daniel, 85c:15030
- Bhatia, Rajendra (with Davis, Chandler) A bound for the spectral variation of a unitary operator. 85b:15020
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- Bialas, S. (with Garloff, J.) Intervals of  $P$ -matrices and related matrices. 85c:15028
- Bini, Dario (with Capovani, Milvio) Spectral and computational properties of band symmetric Toeplitz matrices. 85k:15008
- Böttcher, Albrecht (with Silbermann, Bernd)  $\star$ Invertibility and asymptotics of Toeplitz matrices. 85g:47037
- Capovani, Milvio See Bini, Dario, 85c:15008
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- Chang, Geng Zhe (with Davis, Philip J.) A circulant formulation of the Napoleon-Douglas-Neumann theorem. 85b:51022
- Chen, Gong Ning Some generalizations of diagonal dominance associated with  $G$ -functions. 85c:15029
- Datta, Biswa Nath See Carlson, David H.; et al., 85g:93014
- Davis, Chandler See Bhatia, Rajendra, 85b:15020
- Davis, Philip J. See Chang, Geng Zhe, 85b:51022
- Delaarte, Ph. (with Genin, Y.; Kamp, Y.) On the Toeplitz embedding of an arbitrary matrix. 85c:65036
- Dym, Harry (with Gohberg, Israel) On unitary interpolants and Fredholm infinite block Toeplitz matrices. 85d:47028  
(with Gohberg, Israel) Unitary interpolants, factorization indices and infinite Hankel block matrices. 85m:47021a  
(with Gohberg, Israel) Hankel integral operators and isometric interpolants on the line. 85m:47021b
- Feinsilver, Philip Circulants, inversion of circulants, and some related matrix algebras. 85c:15005
- Garloff, J. See Bialas, S., 85c:15028
- Genin, Y. See Delaarte, Ph.; et al., 85f:65036
- Gohberg, Israel See Dym, Harry, 85d:47028; Dym, Harry, 85m:47021a and 85m:47021b
- Goldberg, Moshe On the mapping  $A \rightarrow A^+$ . 85a:15021
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- Gu, Dun He Some properties of  $M$ -matrices. 85g:15024
- Hansen, Frank Means and concave products of positive semidefinite matrices. 85b:47015
- Hershkovits, Daniel (with Berman, Abraham) Notes on  $\omega$ - and  $r$ -matrices. 85c:15030
- Jeter, Melvyn W. (with Pye, W. C.) Some properties of  $Q$ -matrices. 85c:90091
- Johnson, Charles R. See Grone, Robert; et al., 85d:05109
- Kala, Radosław See Bakšalary, Jerzy K.; et al., 85h:15022 and 85j:15016
- Kamp, Y. See Delaarte, Ph.; et al., 85f:65036
- Kłaczynski, K. See Bakšalary, Jerzy K.; et al., 85h:15022
- Kundert, Eaynas George The Bernoulli of a matrix (a generalization of the Bernoulli numbers). (Italian summary) 85g:05021
- Laffey, Thomas J. A counterexample to Kippenhahn's conjecture on Hermitian pencils. 85d:15013b
- Lancaster, Peter (with Tismenetsky, M.) Inertia characteristics of selfadjoint matrix polynomials. 85f:15010
- Lee, Anna On  $s$ -symmetric matrices over a field  $F$  of characteristic different from two. 85c:15013
- Li, Tian Lin The inverse matrices and the decomposition theorem of cyclic matrices. (Chinese. English summary) 85g:15010
- Meehan, Ar. On integral EP, matrices. 85d:15020
- Mehrmann, Volker On classes of matrices containing  $M$ -matrices and Hermitian positive semidefinite matrices. 85c:15024
- Potapov, V. P. A theorem on the modulus. II. (Russian) 85c:47054
- Pye, W. C. See Jeter, Melvyn W., 85c:90091
- de Sá, Eduardo Marques See Carlson, David H., 85a:15018 and Grone, Robert; et al., 85d:05109
- Schneider, Hans Theorems on  $M$ -splittings of a singular  $M$ -matrix which depend on graph structure. 85c:15016  
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- Vavřín, Zdeněk Inverses of Löwner matrices. 85k:15005
- Voevodin, V. V. (with Tyrtshnikov, E. E.) Calculations with Toeplitz matrices. (Russian) 85m:15001
- Waterhouse, William C. A conjectured property of Hermitian pencils. 85d:15013a
- Werner, Hans-Joachim Charakterisierungen von monotonen Matrizen. (English summary) [Characterizations of monotone matrices] 85j:15007
- Wolkowicz, Henry See Grone, Robert; et al., 85d:05109

## 15A60 Norms of matrices, numerical range, applications of functional analysis to matrix theory [See also 65F35, 65J05.]

- Artzroun, Marc A theorem on products of matrices. 85k:15019
- Au-Yeung, Yik Hoi (with Tsing, Nam Kiu) A conjecture of Marcus on the generalized numerical range. 85c:15029  
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(with Tsing, Nam Kiu) Some theorems on the generalized numerical ranges. 85c:15039
- Barker, George Phillip Applications of the joint angular field of values. 85i:15039
- Friedland, S. (with Zenger, C.) All spectral dominant norms are stable. 85d:15031  
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- Goldberg, Moshe (with Straus, E. G.) Multiplicativity of  $l_p$  norms for matrices. 85i:15041  
(with Straus, E. G.) Multiplicativity factors for  $C$ -numerical radii. 85k:15020
- Kosma, László Some norm-inequalities of the convolution for matrices. 85i:15042
- Li, Xin Kai See Ma, Si Liang, 85c:15040
- London, David An inequality for the spectral norm of certain matrices. 85d:15032
- Ma, Si Liang (with Li, Xin Kai) A theorem on uniform boundedness of a family of  $3 \times 3$  matrices. (Chinese. English summary) 85c:15040
- Malek-Shahmirzadi, Massoud (with Oshima, Kunio) On certain classes of matrix norms. 85a:15028  
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- Narcowich, F. J. (with Ward, J. D.) Toeplitz-Hausdorff systems. 85i:15043
- Ong, Sing Cheong On the Schur multiplier norm of matrices. 85i:15044
- Oshima, Kunio See Malek-Shahmirzadi, Massoud, 85a:15028
- Plák, Vlastimil Bezoutians and projections. 85i:15045a  
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- Straus, E. G. See Goldberg, Moshe, 85i:15041 and 85k:15020
- Sunder, V. S. On permutations, convex hulls, and normal operators. 85b:15032
- Tadmor, Eitan See Friedland, S., 85i:15040
- Tsing, Nam Kiu Diameter and minimal width of the numerical range. 85d:15033  
The constrained bilinear form and the  $C$ -numerical range. 85b:15033  
See also Au-Yeung, Yik Hoi, 85c:15039; Au-Yeung, Yik Hoi, 85c:15029 and 85f:15021
- Ward, J. D. See Narcowich, F. J., 85i:15043
- Zenger, C. Dual operator norms and the spectra of matrices. 85g:15030  
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- Bhatia, Rajendra (with Davis, Chandler) A bound for the spectral variation of a unitary operator. 85b:15020
- Cortés, Joaquín See Fuschmann, Heinrich, 85a:65052
- Davis, Chandler Dilations preserving a bound on the norm of an operator. 85h:47007  
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- De Malafosse, Bruno Résolution des systèmes linéaires infinis et variation d'un élément dans une matrice infinie. [Solution of infinite linear systems and variation of one element in an infinite matrix] 85h:15008
- Demko, Stephen (with Moss, William F.; Smith, Philip W.) Decay rates for inverses of band matrices. 85m:15002
- Elami, Esfandiar See Abian, Alexander, 85e:15002
- Goldberg, Moshe On the mapping  $A \rightarrow A^+$ . 85a:15021
- Lyantse, V. É. Can nonstandard analysis be ignored? (Jordan form of an operator in an infinite-dimensional space). (Russian) 85m:47011
- Mączyński, Maciej J. A functional characterization of inner product vector spaces. 85f:46046
- McKee, Sean Discretization methods and block isoclinal matrices. 85d:65025
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- Romanov, L. I. Normality of a system of cones and positive solutions of linear equations. (Russian) 85j:65020
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- Vitória, José Bounds for the spectral radius of the inverse of a partitioned matrix. (See 85g:15005)

## 15A63 Quadratic and bilinear forms, inner products [See mainly 11Exx.]

Akhleser, T. A. Triangular classification of quadratic forms over an arbitrary field. (Russian) **85e:15030**

Jacobson, D. H. See Martin, D. H., **(85g:85011)**

Lotwak, Erwin On power means of positive quadratic forms. **85d:15034**

Martin, D. H. (with Jacobson, D. H.) Structure theorems and finite tests for conditionally definite quadratic forms. (See **85g:85011**)

Vukman, J. Bilinear and quadratic functionals. (Slovenian. English summary) **85f:15022**

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Arutyunov, A. V. (with Tynyanekii, N. T.) The fixed sign property of quadratic forms on a cone. (Russian) **85f:46047**

Bier, Thomas A remark on constructions of certain normed and nonsingular bilinear maps. **85a:11008**

Bilchev, S. I. A pseudoscalar product and an application. (Bulgarian) **85f:51022**

Dovlyash, L. N. Quadratic mappings of a special type. (Russian. English summary) **85b:53063**

Fitzgerald, Robert W. Rotations and linkage of 2-fold Pfister forms. **85b:11030**

King, Oliver H. Imprimitivity maximal subgroups of the orthogonal, special orthogonal, unitary and special unitary groups. **85d:20038**

Krepas, V. L. Quadratic forms nonnegative on the orthant. (Russian) **85i:90099**

Męczyński, Maciej J. A functional characterization of inner product vector spaces. **85f:46046**

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Spaltenstein, N. Dégénérescences des formes bilinéaires. [Degeneracy of bilinear forms] **85e:14032**

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Vershik, A. M. Quadratic forms that are positive on the cone, and quadratic duality. (Russian. English summary) **85h:90134**

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Zoritto, Frank A. See Okoh, Frank, **85f:15001**

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Elashvili, A. G. See Antonyan, L. V., **85b:15034**

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Dixon, Geoffrey Algebraic unification. **85b:81217**

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## 15A69 Multilinear algebra, tensor products

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Marques, M. D. P. M. (with Morreau, J.-J.) Isotropie et convexité dans l'espace des tenseurs symétriques. [Isotropy and convexity in the space of symmetric tensors] **85d:15035**

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Towber, Jacob Natural transformations of tensor-products of representation-functors. I. Combinatorial preliminaries. **85d:15036**

Weinberg, David A. Canonical forms for symmetric tensors. **85b:15037**

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Brion, Michel Invariants de plusieurs formes binaires. (English summary) [Invariants of several binary forms] **85d:15037**

Chollet, John See Marcus, Marvin, **85i:15048**

Dias da Silva, J. A. Decomposable tensors. (See **85g:15005**)

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Formanek, E. Invariants and the ring of generic matrices. **85g:15031**

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Strassen, V. Rank and optimal computation of generic tensors. **85b:15039**

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Dixmier, Jacques Série de Poincaré et systèmes de paramètres pour les invariants des formes binaires. [Poincaré series and systems of parameters for invariants of binary forms] **85f:14050**

Jarić, Marko V. (with Michel, L.; Sharp, R. T.) Zeros of covariant vector fields for the point group: invariant formulation. (French summary) **85k:58068**

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- Kataylo, P. I. Rationality of orbit spaces of irreducible representations of the group  $SL_2$ . (Russian) **85g:14057**
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- Kung, Joseph P. S. (with Rota, Gian-Carlo) The invariant theory of binary forms. **85g:05003**
- Lleó Morilla, A. ★ *Tensores cartesianos y sus aplicaciones*. (Spanish) [Cartesian tensors and their applications] **85a:53016**
- McDonald, Bernard R.  $R$ -linear endomorphisms of  $(R)_n$  preserving invariants. **85c:15025**
- Michel, L. See Jaric, Marko V.; et al., **85k:58068**
- Nakajima, Haruhisa Regular rings of invariants of unipotent groups. **85f:20038**
- Neudecker, H. On Jacobians of transformations with skew-symmetric, strictly (lower) triangular or diagonal matrix arguments. **85c:15005**
- Panyushev, D. I. Isomorphisms between orbit spaces. (Russian) **85f:14051**
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- Scheumert, M. Graded tensor calculus. **85h:17009a**
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- Sode, E. See Beju, I.; et al., **85f:53001b**
- Springer, T. A. *Séries de Poincaré dans la théorie des invariants*. [Poincaré series in invariant theory] **85g:20057**
- Stoyanova, R. S. See Khrystova, Ivanka; et al., **85g:70005**
- Sukhotin, B. V. Modeling of grammatical categories by means of tensor algebra. (Russian) **85d:68071**
- Teodorescu, P. P. See Beju, I.; et al., **85f:53001b**
- Weinberg, David A. Canonical forms for symmetric tensors. **85b:15037**
- Wilkerson, Clarence A primer on the Dickson invariants. **85c:55017**

#### 15A75 Exterior algebra, Grassmann algebras

- Makar-Limanov, Leonid On Grassmann algebras of graphs. **85i:15051**
- Nikolaishvili, V. V. An application of duality for the exterior algebra with an infinite number of generators. (Russian. English and Georgian summaries) **85i:15052**
- Popov, A. P. Identities of the tensor square of a Grassmann algebra. (Russian) **85j:15018**
- Vanstone, J. R. More new identities in mixed exterior algebra. **85j:15019**

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- Gordon, Jean Applications of the Grassmann algebra to coding theory. **85h:94026**

#### 15A90 Applications to physics

- Polansky, Oskar E. Relations between the roots of the acyclic and the characteristic polynomials of Hückel and Möbius cycles—eigenvalues of certain Hückel and Möbius forms of polyacenes. **85b:15040**

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- Benenti, S. Linear symplectic relations. **85g:58034**
- Kamefuchi, S. See Ohnuki, Y., **85g:81078**
- Naah, Patrick L. Identities satisfied by the generators of the Dirac algebra. **85d:23039**
- Ohnuki, Y. (with Kamefuchi, S.) Fermi-Bose similarity, supersymmetry and generalized numbers. II. (Italian summary) **85g:81078**
- Okuda, Kazuko See Takahashi, Yasushi, **85a:81043**
- Shrager, Richard L. Optical spectra from chemical titration: an analysis by SVD. **85e:15017**
- Takahashi, Yasushi (with Okuda, Kazuko) A spinorization of a constrained vector system and a spinor reconstruction theorem. **85a:81043**
- Wene, G. P. Algebras with anticommuting basal elements, space-time symmetries, and quantum theory. **85k:17003**
- A construction relating Clifford algebras and Cayley-Dickson algebras. **85m:15016**

#### 15A99 Miscellaneous topics

- Cain, Bryan E. Inside the  $D$ -stable matrices. **85a:15028**
- Cerlenco, Luigi (with Piras, Francesco) Powers of a matrix. (Italian summary) **85c:15045**
- Chi, Zhi Min Fuzzy vector spaces. (Chinese. English summary) **85e:15031**
- Cuninghame-Green, R. A. The characteristic maxpolynomial of a matrix. **85d:15038**
- Hashimoto, Hiroshi Canonical form of a transitive fuzzy matrix. **85c:15046**
- Subuniverses of fuzzy matrices. **85b:15041**
- Hertz, David (with Zeheb, E.) A general property of the transformation matrices associated with the  $n$ -variable bilinear transformation. **85e:15032**
- Manca, Raimondo A new type of matrix multiplication. (Italian. English summary) **85k:15021**
- Peng, Xian Tu Some properties of idempotent matrices on a lattice. (Chinese. English summary) (Not in MR)
- Piras, Francesco See Cerlenco, Luigi, **85c:15045**
- Ukhanskaya, D. V. A representation of polynomial matrices in the form of a matrix continued fraction. (Russian) (Not in MR)
- Zeheb, E. See Hertz, David, **85e:15032**
- Zhang, Bo Sheng A method for solving fuzzy relation equations by defining the symbolic value and generalized inverses of a fuzzy matrix. (Chinese. English summary) **85g:15032**

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- Abian, Alexander Row orthonormal infinite square matrices. **85e:47013**
- Batyuk, Yu. R. Vorbitskii's criterion for a matrix integral continued fraction. (Russian) (Not in MR)
- Coffman, E. G., Jr. (with Yannakakis, Mihalis) Permuting elements within columns of a matrix in order to minimize maximum row sum. **85g:90063**
- Datta, K. B. Hankel-matrix approach to invertibility of linear multivariable systems. **85c:93053**
- Gibson, C. G. (with Ward, T. D.) On stratifying pairs of linear mappings. **85c:58018**
- Gille, J.-Ch. (with Vidal, Pierre; Węgrzyn, Stefan; Ouellet, Y.) Calcul de la composition cellulaire et de la fonction de croissance d'un système évolutif. (Russian and Polish summaries) [Calculation of the cellular composition and the growth function of an evolving system] **85c:68060**
- Hansen, Poul E. Raising Leslie matrices to powers: a method and applications to demography. **85d:92024**
- Hartfiel, D. J. (with Loewy, R.) On matrices having equal corresponding principal minors. **85d:15011**
- Judica, J. J. On principal transforms of matrices. **85j:90063**
- László, Lajos A generalization of the Frobenius companion matrix. **85h:15014**
- Levi, Mark On stability of symplectic maps. **85f:58062**
- Li, Tie Jun Realizability of matrix sequences over integral domains. (Chinese) (Not in MR)
- Lin, Lü Duan Diagonally dominant fuzzy transformations and their fuzzy eigensets. (Chinese) **85i:15015**
- Loewy, R. See Hartfiel, D. J., **85d:15011**
- Maybee, John S. A tutorial on qualitative matrices and their applications. **85c:05020**
- Mayer, Günter On the convergence of powers of interval matrices. **85f:65046**
- Melkman, Avraham A. The distance of a subspace of  $\mathbb{R}^m$  from its axes and  $n$ -widths of octahedra. **85m:41037**
- Nochka, E. I. On a theorem from linear algebra. (Russian) **85c:32004**
- Ouellet, Y. See Gille, J.-Ch.; et al., **85c:68060**
- Ran, A. C. M. (with Rodman, L.) Stability of neutral invariant subspaces in indefinite inner products and stable symmetric factorizations. **85a:47007**
- Rodman, L. See Ran, A. C. M., **85a:47007**
- Shvartin, S. M. See Zalka, V. V., **85k:90074**
- Vidal, Pierre See Gille, J.-Ch.; et al., **85c:68060**
- Ward, T. D. See Gibson, C. G., **85c:58018**
- Węgrzyn, Stefan See Gille, J.-Ch.; et al., **85c:68060**
- Werner, Wilhelm A generalized companion matrix of a polynomial and some applications. **85b:65042**
- Wu, Shou Zhi The problem of singularity of a grey matrix. (Chinese. English summary) **85g:93020**
- Yannakakis, Mihalis See Coffman, E. G., Jr., **85g:90063**
- Zalka, V. V. (with Shvartin, S. M.) Cycles generated by an arbitrary set of matrix elements. (Russian) **85k:90074**

### 16-XX ASSOCIATIVE RINGS AND ALGEBRAS (For the commutative case, see 13-XX.)

- Tausky, Olga The semigroup of non-left zero divisors in an algebra, infinite powers of matrices and related matters. (See **85i:12002**)

#### 16-01 Elementary exposition; textbooks

##### secondary classifications (16-01)

- Goodearl, K. R. ★ Notes on real and complex  $C^*$ -algebras. **85d:46079**
- Skornyakov, L. A. ★ *Элементы общей алгебры*. (Russian) [Elements of general algebra] **85k:00002**
- Xie, Bang Jie ★ *Chouxianq daishuxue*. (Chinese) [Abstract algebra] **85f:00002**

#### 16-02 Advanced exposition (research surveys, monographs, etc.)

- Albu, Toma (with Năstăsescu, Constantin) ★ Relative finiteness in module theory. **85k:16001**
- Harada, Manabu ★ Factor categories with applications to direct decomposition of modules. **85k:16002**
- Markov, V. T. (with Mikhailév, A. V.; Skornyakov, L. A.; Tuganbaev, A. A.) Rings of endomorphisms of modules and lattices of submodules. (Russian) **85a:16001**
- Mikhailév, A. V. See Markov, V. T.; et al., **85a:16001**
- Năstăsescu, Constantin See Albu, Toma, **85k:16001**
- Skornyakov, L. A. See Markov, V. T.; et al., **85a:16001**
- Tuganbaev, A. A. See Markov, V. T.; et al., **85a:16001**

##### secondary classifications (16-02)

- Karpilovsky, Gregory ★ Commutative group algebras. **85a:16014**
- Năstăsescu, Constantin ★ *Teoria dimensiunii în algebra necomutativă*. (Romanian) [Dimension theory in noncommutative algebra] **85c:16045**
- Pila, G. ★ Near-rings. **85h:16046**
- Young, Nicholas J. Linear fractional transformations in rings and modules. **85c:15002**

#### 16-03 Historical (must also be assigned at least one classification number from Section 01)

##### secondary classifications (16-03)

- Andrunakievich, V. A. Ring theory. (Russian) (See **85g:01004**)
- LaDuke, Jeanne The study of linear associative algebras in the United States, 1870-1927. **85c:01034**



## 16-06 Proceedings, conferences, etc.

- (Arnaudov, V. I.) See *Studies in the theory of rings, algebras and modules*, 85b:16001  
 (Miyashita, Yūichi) See *Proceedings: Symposium on ring theory*, 85b:16003  
 (Van Oystaeyen, F.) See *Methods in ring theory*, 85b:16001  
 Antwerp ★ *Methods in ring theory*, 85b:16001  
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 Methods in ring theory ★ *Methods in ring theory*, 85b:16001

## Proceedings:

- Symposium on ring theory ★ *Proceedings of the 17th symposium on ring theory*, 85b:16003

*Studies in the theory of rings, algebras and modules* ★ *Исследования по теории колец, алгебр и модулей*. (Russian) [Studies in the theory of rings, algebras and modules] 85b:16001

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- (with Meldrum, J. D. P.) Centralizer representations of near-fields. 85j:16058
- (with Oswald, A.) The centralizer of the general linear group. 85b:16045
- (with Oswald, A.) On the centralizer of a semigroup of group endomorphisms. 85k:16062
- See also Clay, J. R.; et al., 85j:16055
- Meldrum, J. D. P. Upper faithful d.g. near-rings. 85e:16062
- See also Mahmood, S. J., 85b:16033; Clay, J. R.; et al., 85j:16055; Maxson, C. J., 85j:16056 and Clay, J. R., 85c:16051
- Murty, C. V. L. N. On strongly regular near-rings. 85j:16059
- Generalized near-fields. 85c:16054
- A note: "On left bipotent near-rings" [Proc. Edinburgh Math. Soc. (2) 22 (1979), no. 2, 99-107; MR 80j:16024] by J. L. Jat and S. C. Choudhary. 85j:16060
- A note on a paper: "Near-rings without nilpotent elements" [Publ. Math. Debrecen 20 (1973), 201-205; MR 48 #11221] by H. E. Heathley. 85c:16063
- See also Reddy, Y. V., 85c:16055
- Natarajan, N. S. Distributors in near-rings and affine near-rings. 85i:16050
- Nienemaa, Markku On near-rings with ATM. 85d:16032
- Oswald, A. See Maxson, C. J., 85b:16045 and 85j:16062
- Perić, V.  $D$ -quasi-Regulartät und  $D$ -Nilpotenz in Fasttringen mit streng kleinem Distributivitätsdefekt  $D$ . [ $D$ -quasiregularity and  $D$ -nilpotency in near-rings with strictly small distributivity defect  $D$ ] 85c:16064
- Pils, G. ★ Near-rings. 85b:16046
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- Reddy, Y. V. (with Murty, C. V. L. N.) On strongly regular near-rings. 85c:16055
- Sambasiva Rao, V. (with Satyanarayana, Bh.) The prime radical in near-rings. 85f:16048
- Satyanarayana, Bh. See Sambasiva Rao, V., 85f:16048
- Saxena, P. K. See Bhandari, M. C., 85j:16054
- Smith, Kirby C. See Maxson, C. J., 85f:16047
- Wiegandt, R. See Betsch, G., 85m:16039
- Yakabe, Iwao Quasi-ideals in near-rings. 85b:16035

#### secondary classifications (16A76)

- Heblach, U. On special  $Q_r$ -filters of semigroups, semirings and rings. 85b:20193
- Hofer, G. (with Pils, G.) Group automata and near-rings. 85b:80048
- Klucky, Dalibor (with Marková, Libuše) On valuations of nearfields. (Russian and Czech summaries) 85c:12012
- Kreft, Walter Fastkörper mit multiplikativer FC-Gruppe. [Nearfields with multiplicative FC-group] 85c:12009
- Magill, K. D., Jr. (with Misra, P. R.; Tewari, U. B.) Finite automorphism groups of laminated near-rings. 85m:20005
- Marková, Libuše See Klucky, Dalibor, 85c:12012
- Maxson, C. J. Near rings associated with Sperner spaces. 85c:51004
- Misra, P. R. See Magill, K. D., Jr.; et al., 85m:20005
- Pettet, Martin R. Partitioned groups and the additive structure of centralizer near-rings. 85i:20029
- Pils, G. See Hofer, G., 85b:80048
- Sita Rama Murthi, A. Isomorphisms of semigroups of transformations. 85d:20078
- Tewari, U. B. See Magill, K. D., Jr.; et al., 85m:20005

### 16A78 Semirings and other generalizations of rings

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- Jenkins, T. L. See Olson, D. M., 85c:16056
- Jesek, Jaroslav (with Kepka, T.) Simple semimodules over commutative semirings. 85c:16055
- Kepka, T. See Jesek, Jaroslav, 85c:16055
- Neuman, S. Khalid Pseudoring: quotient ideals and collapsibility. 85f:16049
- Nikitin, A. N. The Jacobson radical of Artinian  $(2, n)$ -rings. (Russian) 85k:16063
- Nobusawa, Nobuo On duality in  $\Gamma$ -rings. 85a:16043
- Olson, D. M. (with Jenkins, T. L.) Radical theory for hemirings. 85c:16056
- Rodrigues, Gastano Green relations and semirings that are unions of quasirings. (Italian) (See 85g:20003)
- Satyanarayana, Bh. A note on  $\Gamma$ -rings. 85f:16050
- Weinert, H. J. On 0-simple semirings, semigroup semirings, and two kinds of division semirings. 85i:16051
- Xu, Zhong Ming On the structure of semisimple and right Artinian  $\Gamma$ -rings. (Chinese. English summary) 85k:16064
- Zelenikow, J. On regular ring-semigroups and semirings. 85k:16065

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- Batbedat, André Algebras, prerings, semirings and rectangular bands. 85g:08002
- Ferraro, Giovanni Multiplicative semigroups of quasirings. (Italian) (See 85g:20003)
- Gallina, Giordano (with Scapellato, Raffaele) Extensions of ringoids. (Italian. English summary) 85k:20077
- Scapellato, Raffaele See Gallina, Giordano, 85k:20077
- Weinert, H. J. Extensions of seminearrings by semigroups of right quotients. 85f:20071

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- Arnautov, V. I. (with Mikhalev, A. V.) Sufficient conditions for extension of topologies of a group and a ring to their group ring. (Russian) 85a:16044
- (with Ursul, M. I.) Quasicomponents of topological rings and modules. (Russian) 85i:16052
- Liang, De You Ringlike space constructed from grouplike space. 85d:16033
- Mader, A. Completions via duality. 85i:16053
- Menini, Claudia (with Orsatti, A.) Dualities between categories of topological modules. 85b:16056
- Mikhalev, A. V. See Arnautov, V. I., 85a:16044
- Orsatti, A. See Menini, Claudia, 85b:16056
- Ursul, M. I. Retracts of locally compact rings. (Russian) 85m:16021
- See also Arnautov, V. I., 85j:16052

#### secondary classifications (16A80)

- Alena, P. Relative regularity and Fredholm theory in semiprime algebras with identity. (Italian summary) 85c:46034
- Albu, Toma (with Năstăsescu, Constantin) ★ Relative finiteness in module theory. 85k:16001
- Flachmeyer, Jürgen Topological semifields and Boolean algebras corresponding to them. (Russian) 85d:06012
- Kowol, G. Approximation on universal algebras by means of polynomial functions. 85b:08005
- Kyriazis, Athanasios On the spectra of topological  $A$ -tensor product  $A$ -algebras. 85b:08006
- Larotonda, Angel R. (with Zalduendo, Ignacio M.) Continuity of characters in products of algebras. 85b:46056
- Năstăsescu, Constantin See Albu, Toma, 85k:16001
- Slin'ko, A. M. On compact nonassociative rings. (Russian) 85m:17004
- Stoyanov, Luchezar N. Dualities over compact commutative rings. 85b:13018
- Yood, Bertram Structure spaces of rings and Banach algebras. 85m:46044
- Zalduendo, Ignacio M. See Larotonda, Angel R., 85b:46056
- Želasko, W. On nonremovable ideals in commutative locally convex algebras. 85k:46061
- Zelmanowitz, J. M. ★ Duality theory for quasi-injective modules. 85g:16012
- Duality theory for quasi-injective modules. (See 85b:16001)
- Zöschinger, Helmut Linear-kompakte Moduln über noetherschen Ringen. [Linearly compact modules over Noetherian rings] 85d:13024

### 16A86 Ordered rings [See also 06F25.]

- Rai, R. K. On orthogonal completion of reduced rings. 85c:16057

#### secondary classifications (16A86)

- Hansen, D. J. Positive derivations on partially ordered strongly regular rings. 85f:16042

### 16A89 Equivalence of module categories

- Abrams, Gene D. Morita equivalence for rings with local units. 85b:16037
- Camillo, Victor Morita equivalence and infinite matrix rings. 85a:16045
- Takeuchi, Mitsuhiro Introduction to  $\sqrt{\text{Morita}}$  theory. (See 85k:16003)

#### secondary classifications (16A89)

- Bergman, George M. Some examples of noncompressible rings. 85b:16000

## 16A90 Categorical methods and categorical ring theory

- Borceux, Francis (with Simmons, Harold; Van den Bosche, Gilberte) A sheaf representation for modules with applications to Gelfand rings. **85j:16061**
- Colby, R. R. (with Fuller, K. R.) QF-3' rings and Morita duality. **85e:16066**
- Dicks, Warren (with Stephenson, W.) Epimorphisms and dominions of Dedekind domains. **85i:16054**
- Fuller, K. R. See Colby, R. R., **85e:16066**
- Nicholson, W. K. (with Watters, J. F.) Central closures and Morita contexts. **85j:16062**
- Simmons, Harold See Borceux, Francis; et al., **85j:16061**
- Stephenson, W. See Dicks, Warren, **85i:16054**
- Van den Bosche, Gilberte See Borceux, Francis; et al., **85j:16061**
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- Albu, Toma (with Năstăsescu, Constantin) ★ Relative finiteness in module theory. **85i:16001**
- Colby, R. R. (with Fuller, K. R.) On rings whose double dual functors preserve monomorphisms. **85d:16011**
- Diers, Yves Une construction universelle des spectres, topologies spectrales et faisceaux structuraux. [A universal construction of spectra, spectral topologies and structure sheaves] **85i:16003**
- Fuller, K. R. See Colby, R. R., **85d:16011**
- Green, Edward L. Graphs with relations, coverings and group-graded algebras. **85a:16033**
- Harada, Manabu ★ Factor categories with applications to direct decomposition of modules. **85k:16002**
- Menini, Claudia (with Orsatti, A.) Dualities between categories of topological modules. **85b:16036**
- Năstăsescu, Constantin  $\Delta$ -anneaux et modules  $\Delta$ -injectifs. Applications aux catégories localement artiniennes. [ $\Delta$ -rings and  $\Delta$ -injective modules. Applications to locally Artinian categories] **85a:16029**
- See also Albu, Toma, **85k:16001**
- Orsatti, A. See Menini, Claudia, **85b:16036**
- Porter, Timothy The kernels of completion maps and a relative form of Nakayama's lemma. **85c:16037**
- Tachikawa, Hiroyuki Reflection functors and Auslander-Reiten translations for self-injective algebras. **85d:16027**

## 16A99 Miscellaneous topics

- Gardner, B. J. On a problem of F. Szász: when are all subrings endomorphic images? **85i:16055**
- Loonstra, F. Subproducts defined by means of subdirect products. (Italian summary) **85i:16056**
- Mal'tsev, Yu. N. Distributive varieties of associative algebras, the groupoid of whose subvarieties is a commutative semigroup. (Russian) **85h:16047**
- Prešić, Slavica B. Embedding of a ring in a ring with unity. **85k:16066**
- Van Oystaeyen, F. Some constructions of rings. **85f:16051**

## secondary classifications (16A99)

- Bokut', L. A. Some problems of combinatorial algebra. (Russian) **85h:06013**
- Bunyatov, M. R. (with Dzhabrailova, R. P.) Koszul homology theory and Fredholm families. (Russian. English and Azerbaijani summaries) **85f:46133**
- Chekanu, G. P. Locally distinguished varieties. (Russian) **85e:16039**
- Day, B. J. Coproducts of algebras and derivations on categories. **85f:18004**
- De Bodt, Ann (with Satyanarayana, M.) On semigroups admitting ring structure. III. (Russian and Czech summaries) **85k:20199**
- Dutta, T. K. On generalised semi-ideals of rings. **85e:16054**
- Dzhabrailova, R. P. See Bunyatov, M. R., **85f:46133**
- Feigelstock, Shalom ★ Additive groups of rings. **85e:20042**
- Formanek, E. Invariants and the ring of generic matrices. **85g:15031**
- Golubchik, I. Z. Subgroups of the general linear group  $GL_n(R)$  over an associative ring  $R$ . (Russian) **85j:20042**
- Hausen, Jutta The additive group of rings with totally ordered ideal lattices. **85i:20061**
- Helmstetter, J. ★ Algèbres de Clifford et algèbres de Weyl. (French) [Clifford algebras and Weyl algebras] **85d:58029**
- Hu, Shu An On the tensor product functor for left modules. I. (Chinese. English summary) **85i:16030a**
- On the tensor product functor for left modules. II. (Chinese. English summary) **85i:16030b**
- Kirillov, A. A. (with Kontsevich, M. L.; Molev, A. I.) Algebras of intermediate growth. (Russian. English summary) **85e:17011**
- Kontsevich, M. L. See Kirillov, A. A.; et al., **85e:17011**
- Liu, Wang Jin Operations on fuzzy ideals. **85g:03077**
- McCrimmon, Kevin A basic associativity theorem for alternative algebras. **85k:17024**
- Molev, A. I. See Kirillov, A. A.; et al., **85e:17011**
- Paravathi, M. (with Rajendran, P. A.) Gamma-rings and Morita equivalence. **85f:17013**
- Rajendran, P. A. See Paravathi, M., **85f:17013**
- Sarath, B. (with Varadarajan, K.) Fundamental theorem of projective geometry. **85d:16008**
- Satyanarayana, M. See De Bodt, Ann, **85k:20199**
- Smith, Larry (with Switzer, R. M.) Polynomial algebras over the Steenrod algebra: variations on a theorem of Adams and Wilkerson. **85m:55021**
- Switzer, R. M. See Smith, Larry, **85m:55021**
- Van der Poorten, Alfred J. Hadamard operations on rational functions. **85k:11050**
- Varadarajan, K. See Sarath, B., **85d:16008**
- Walpole, L. J. Fourth-rank tensors of the thirty-two crystal classes: multiplication tables. **85k:82046**
- Weinert, H. J. On quasi-ideals in rings. **85e:16055**

## 17-XX NONASSOCIATIVE RINGS AND ALGEBRAS

## 17-01 Elementary exposition; textbooks

## secondary classifications (17-01)

- Skornyakov, L. A. ★ Элементы общей алгебры. (Russian) [Elements of general algebra] **85k:00062**
- Varadarajan, V. S. ★ Lie groups, Lie algebras, and their representations. **85e:22001**
- Xie, Bang Jie ★ Chouxiang daishuxue. (Chinese) [Abstract algebra] **85f:00062**

## 17-03 Historical (must also be assigned at least one classification number from Section 01)

## secondary classifications (17-03)

- Andrunakievich, V. A. Ring theory. (Russian) (See **85g:01004**)
- Gindikin, S. G. (with Kirillov, A. A.) Algebraic aspects of functional analysis. (Russian) (See **85g:01004**)
- Kirillov, A. A. See Gindikin, S. G., (**85g:01004**)

## 17-04 Explicit machine computation and programs (not the theory of computation or programming)

- Hogben, Leslie Identities of nonassociative algebras studied by computer. **85j:17001**

## 17-06 Proceedings, conferences, etc.

## secondary classifications (17-06)

- (Meralyakov, Yu. I.) See Groups and other algebraic systems with finiteness conditions, **85f:20003**
- Groups and other algebraic systems with finiteness conditions ★ Группы и другие алгебраические системы с условиями конечности. (Russian) [Groups and other algebraic systems with finiteness conditions] **85f:20003**

## 17Axx General nonassociative rings

## 17A01 General theory

## secondary classifications (17A01)

- Guo, Yuan Chun Some commutativity conditions for associative rings and nonassociative rings. (Chinese. English summary) **85a:16038**
- Mez, Hans-Christian HNN-extensions of algebras and applications. **85f:16043**

## 17A15 Noncommutative Jordan algebras

## secondary classifications (17A15)

- Ayupov, Sh. A. Measure and topology on Jordan algebras. **85b:46069**
- Integration on Jordan algebras. (Russian) **85b:46070**
- Theorems on the convergence of martingales, and strong laws of large numbers in Jordan algebras. (Russian) **85b:46071**

## 17A20 Flexible algebras

- Dixmier, Jacques Certaines algèbres non associatives simples définies par la transvection des formes binaires. [Some simple nonassociative algebras defined by the transvection of binary forms] **85d:17001**
- Okubo, Susumu Errata: "Classification of flexible composition algebras. I" [Hadronic J. 5 (1981/82), no. 4, 1564-1612; MR84d:17001]. **85d:17002**

## secondary classifications (17A20)

- Ko, Young So (with Myung, Hyo Chul) On a class of Mal'cev-admissible algebras. (Korean summary) **85k:17025**
- Ktorides, C. N. (with Papaloucas, L. Ch.) Nonassociative properties of a deformed Poisson product and the quantisation problem. **85b:58053**
- Myung, Hyo Chul See Ko, Young So, **85k:17025**
- Papaloucas, L. Ch. See Ktorides, C. N., **85b:58053**

## 17A30 Algebras satisfying other identities

- Allison, B. N. (with Faulkner, John R.) A Cayley-Dickson process for a class of structurable algebras. **85i:17001**
- Bhandari, M. C. (with Radhakrishna, A.) Radicals in lattice ordered right alternative rings. **85c:17001**
- El-Mallah, Mohamed Lamei Sur les algèbres absolument valuées qui vérifient l'identité  $(x, z, z) = 0$ . (English summary) [Absolute-valued algebras satisfying the identity  $(x, z, z) = 0$ ] **85a:17001**
- Faulkner, John R. See Allison, B. N., **85i:17001**
- Jiménez B., Luis Rafael Rings whose only nilpotent element is zero. (Spanish) **85m:17001**
- Parfenov, V. A. The Specht problem in  $\varepsilon$ -algebras. (Russian) **85e:17002**
- Radhakrishna, A. See Bhandari, M. C., **85c:17001**

## secondary classifications (17A30)

- El Malek, Alfy Abd Cartan subalgebras of a Mal'cev algebra and its ideals. **85j:17034**
- Hentzel, Irvin Roy See Piacentini Cattaneo, Giulia Maria, **85b:17018**
- Hogben, Leslie Identities of nonassociative algebras studied by computer. **85j:17001**
- Lipynskii, R. S. PI-varieties of representations of Lie algebras. (Russian. English summary) **85a:17005**

- Placentini Cattaneo, Giulia Maria (with Hentzel, Irvin Roy) On prime right alternative algebras and alternators. 85b:17018  
 Zamyatin, A. P. Decidability of the elementary theories of certain varieties of rings. (Russian) 85b:33016

## 17A35 Division algebras

- Althoen, Steven C. (with Kugler, Lawrence D.) When is  $R^2$  a division algebra? 85c:17002  
 Kugler, Lawrence D. See Althoen, Steven C., 85c:17002  
 Seligman, George B. Generalized even Clifford algebras. 85e:17001

## secondary classifications (17A35)

- Gluck, Herman (with Warner, Frank; Yang, Chung Tao) Division algebras, fibrations of spheres by great spheres and the topological determination of space by the group behavior of its geodesics. 85i:53047  
 Hefendehl-Hebecker, Lisa Isomorphieklassen vierdimensionaler quadratischer Division-algebren über Hilbert-Körpern. [Isomorphism classes of four-dimensional quadratic division algebras over Hilbert fields] 85f:17001  
 Kugo, Tachiro (with Townsend, P. K.) Supersymmetry and the division algebras. 85e:81054  
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 Yang, Chung Tao See Gluck, Herman; et al., 85i:53047

## 17A36 Automorphisms, derivatives, other operators

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- Schwarz, Gerald W. Invariant theory of  $G_2$ . 85c:20031

## 17A40 Ternary compositions

- Bader, Laura Isomorphism of an  $H$ -ring equipped with an irreducible almost faithful module. (Italian. English summary) 85e:17002  
 Chen, Wei Xin Levitaki's theorem in  $\Gamma$ -rings and generalized  $\Gamma$ -rings. (Chinese. English summary) 85h:17001  
 Creangă, Ion (with Tamaş, Vasile) Contribution to the study of the ternary structures. 85b:17001  
 Dorfmeister, Josef (with Neher, Erhard) Isoparametric triple systems of FKM-type. I. 85i:17002a  
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 Hein, Wolfgang On the structure of reduced  $J$ -ternary algebras of degree two. 85d:17003  
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 Tamaş, Vasile See Creangă, Ion, 85b:17001  
 Yamaguti, Kiyosi On Lie supertriple systems induced from Kantor supertriple systems. 85k:17002

## secondary classifications (17A40)

- Dorfmeister, Josef (with Neher, Erhard) Isoparametric triple systems of algebra type. 85b:53054  
 Kikkawa, Michihiko On homogeneous systems. V. 85b:53035  
 Neher, Erhard See Dorfmeister, Josef, 85b:53054

## 17A45 Quadratic algebras (not quadratic Jordan algebras)

- Hefendehl-Hebecker, Lisa Isomorphieklassen vierdimensionaler quadratischer Division-algebren über Hilbert-Körpern. [Isomorphism classes of four-dimensional quadratic division algebras over Hilbert fields] 85f:17001  
 Stampfi-Rollier, Christiane 4-dimensionale Quasikompositionsalgebren. [4-dimensional quasicomposition algebras] 85e:17003  
 Wene, G. P. Algebras with anticommuting basal elements, space-time symmetries, and quantum theory. 85k:17003

## secondary classifications (17A45)

- Harada, Koichiro On commutative nonassociative algebras associated with the doubly transitive permutation groups  $PSL_m(q)$ ,  $m \geq 3$ . 85k:20013

## 17A60 Structure theory in general nonassociative rings

- Liu, Shao Xue Generalized Hamilton algebras. (Chinese) 85e:17004  
 Martindale, W. S., III (with Miers, C. R.) Herstein's Lie and Jordan theory revisited. (See 85h:16001)  
 Miers, C. R. See Martindale, W. S., III, (85h:16001)

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- Bader, Laura Isomorphism of an  $H$ -ring equipped with an irreducible almost faithful module. (Italian. English summary) 85e:17002  
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 Wiebauer, Robert On prime modules and rings. 85e:16044

## 17A65 Radical theory in general nonassociative rings

- Manley, P. L. Nil radicals in nonassociative rings. 85m:17002  
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## secondary classifications (17A65)

- Betsch, G. (with Wiegandt, R.) Nonhereditary semisimple classes of near-rings. 85m:16020  
 Ma, Zhi Da  $p(x)$ -radicals of alternative rings. (Chinese) 85b:17017  
 Puczyłowski, E. R. On semisimple classes of associative and alternative rings. 85k:16016  
 Wiegandt, R. See Betsch, G., 85m:16020

## 17A70 Super algebras

- Farmer, R. J. (with Jarvis, P. D.) Representations of low-rank orthosymplectic superalgebras by superfield techniques. 85a:17003  
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 Gourdin, Michel From graded Lie algebra to supersymmetry and supergravity. (See 85k:81006)  
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 van Nieuwenhuisen, P. Free graded differential superalgebras. 85j:17002  
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- Bartels, Jochen (with Bronzan, J. B.) Supersymmetry on a lattice. 85a:81086  
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 Filanovskii, I. A. Generalized dimensional reduction and conformal supersymmetry. (Russian. English summary) 85b:81230  
 Flato, Moshe (with Fronsdal, C.) Representations of conformal supersymmetry. 85j:81090  
 Freedman, Daniel Z. (with Nicolai, Hermann) Multiplet shortening in  $Osp(N, 4)$ . 85m:81136  
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 See also Bernstein, Joseph N., 85i:17021  
 Lukierski, Jerzy (with Nowicki, Anatol Andrzej) Euclidean superconformal symmetry and its relation with Minkowski supersymmetries. 85a:81128  
 Mesinecu, L. (with Yao, York Peng) Nonexistence of renormalizable self-interaction in  $N = 2$  supersymmetry for scalar hypermultiplets. 85m:81141  
 Mickelson, Jouko Discrete series of Lie superalgebras. 85j:17030  
 Nguyen Ai Viet Reparametrization of supergroup: superspace as a vectorspace. 85m:22016  
 Nicolai, Hermann See Freedman, Daniel Z., 85m:81136  
 Nowicki, Anatol Andrzej See Lukierski, Jerzy, 85a:81128  
 Ohnuki, Y. (with Kamefuchi, S.) Fermi-Bose similarity, supersymmetry and generalized numbers. II. (Italian summary) 85g:81078  
 Ol'shanetskii, M. A. Supersymmetric two-dimensional Toda lattice. 85e:58053  
 Salingaros, Nikos See Froelich, John, 85m:15015  
 Serganova, V. V. See Leites, D. A., 85m:82020  
 Thierry-Mieg, Jean The ghost spectrum of supergravity is not  $OSp(4/2)$  supersymmetric. 85g:83033  
 Yao, York Peng See Mesinecu, L., 85m:81141  
 Zhang, Da Gan Finite-dimensional real irreducible representations of real Lie superalgebras. (Chinese) 85a:17013

## 17A99 None of the above, but in this section

- Dong, Nai Chang (with Sun, Hui Jun) Commutativity of some nonassociative rings with 1. (Chinese. English summary) 85k:17005  
 Silin'ko, A. M. On compact nonassociative rings. (Russian) 85m:17004  
 Sun, Hui Jun See Dong, Nai Chang, 85k:17005

## 17Bxx Lie algebras {For Lie groups, see 22Exx.}

- Cahn, Robert N. ★ Semisimple Lie algebras and their representations. 85j:17003



## 17B05 Structure theory

- Aldoray, Falli A. M. Subideals of the join of permutable Lie algebras. **85c:17003**
- Boral, Melih (with Ekici, Naime)  $(m+k)$ th term of the lower central series of a free Lie algebra as a subalgebra of the  $m$ th term. (Turkish. English summary) **85j:17004**
- Ekici, Naime See Boral, Melih, **85j:17004**
- Farnsteiner, Rolf On the structure of simple-semiabelian Lie algebras. **85e:17005**
- Kryashovskikh, G. V. Generating and defining relations of subalgebras of Lie algebras. (Russian) **85i:17005**
- Mishchenko, S. P. Varieties of Lie algebras with weak growth of the sequence of codimensions. (Russian. English summary) **85b:17002**
- The Engel identity and its application. (Russian) **85j:17005**
- Talapov, V. V. Algebraically closed metabelian Lie algebras. (Russian) **85e:17006**
- Teneva, S. G. Relatively convex subalgebras of totally ordered Lie algebras. (Bulgarian. English and Russian summaries) **85g:17001**
- Towers, D. A. Corrigenda: "Lattice isomorphisms of Lie algebras" [Math. Proc. Cambridge Philos. Soc. **89** (1981), no. 2, 285-292; MR **82i:17005**]. **85f:17002**

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- Astrakhansev, V. V. On decompositions of metric Lie algebras and of pseudo-Riemannian symmetric spaces. **85e:53058**
- Block, Richard E. (with Wilson, Robert Lee) The restricted simple Lie algebras are of classical or Cartan type. **85k:17007**
- Bokut', L. A. Some problems of combinatorial algebra. (Russian) **85h:06013**
- Faulkner, John R. Derivation invariant bilinear forms without traces. **85i:17003**
- Holm, Darryl D. (with Kupersmidt, B. A.) Planar incompressible Yang-Mills magnetohydrodynamics. **85m:76078**
- Honda, Masanobu Lie algebras in which the join of any set of subideals is a subideal. **85i:17015**
- Kikkawa, Michihiko On homogeneous systems. V. **85h:53035**
- Kohno, Toshiaki On the homology Lie algebra and the nilpotent completion of the fundamental group of the complement of hypersurfaces. **85d:14052**
- Kupersmidt, B. A. See Holm, Darryl D., **85m:76078**
- Lee, Dong Hoon (with Wu, Ta Sun) On prealgebraic groups. **85j:14089**
- Sudbery, A. Octonionic description of exceptional Lie superalgebras. **85c:17011**
- Wilson, Robert Lee See Block, Richard E., **85k:17007**
- Wu, Ta Sun See Lee, Dong Hoon, **85j:14089**

## 17B10 Representations, algebraic theory (weights)

- Bars, I. (with Morel, B.; Ruegg, H.) Kac-Dynkin diagrams and supertableaux. **85i:17006**
- Couture, Michael Josephat See Giroux, Y.; et al., **85j:17008**
- Edwards, S. A. See Gould, M. D., **85c:17006**
- Exner, P. (with Navrátil, O.) ★ On a complete set of irreducible highest-weight representations for  $\mathfrak{sl}(3, \mathbb{C})$ . **85f:17003**
- Flath, Daniel E. The Clebsch-Gordan formulas. **85e:17007**
- On  $\mathfrak{so}_3$  and the tensor operators of  $\mathfrak{sl}_3$ . **85i:17007**
- Giroux, Y. (with Couture, Michael Josephat; Sharp, R. T.) Degenerate enveloping algebras of  $\mathrm{SU}(3)$ ,  $\mathrm{SO}(5)$ ,  $G_2$  and  $\mathrm{SU}(4)$ . **85i:17008**
- Gould, M. D. (with Edwards, S. A.) Enveloping algebra annihilators and projection techniques for finite-dimensional cyclic modules of a semisimple Lie algebra. **85c:17006**
- Gruber, Bruno See Lorente, M., **85j:17006**
- Jakobsen, Hans Plesner Hermitian symmetric spaces and their unitary highest weight modules. **85a:17004**
- Kac, Victor G. Infinite root systems, representations of graphs and invariant theory. II. **85b:17003**
- Lidekii, B. V. The Kostant function of the system of roots  $A_n$ . (Russian) **85h:17004**
- Lipynskii, R. S. PI-varieties of representations of Lie algebras. (Russian. English summary) **85a:17005**
- Lorente, M. (with Gruber, Bruno) Construction of extremal vectors for Verma submodules of Verma modules. **85j:17006**
- Lusztig, George Singularities, character formulas, and a  $q$ -analog of weight multiplicities. **85m:17005**
- Moody, R. V. (with Pianzola, A.)  $\lambda$ -mappings between representation rings of Lie algebras. **85j:17007**
- Morel, B. See Bars, I.; et al., **85i:17006**
- Navrátil, O. See Exner, P., **85f:17003**
- Okubo, Susumu (with Patera, J.) General indices of simple Lie algebras and symmetrized product representations. **85e:17008**
- (Panov, M. I.) See Moody, R. V., **85j:17007**
- Patera, J. See Okubo, Susumu, **85e:17008**
- Pevtsova, T. A. Symplectic structure of orbits of a co-associated representation of Lie algebras of type  $E \times_p G$ . (Russian) **85j:17008**
- Pianzola, A. See Moody, R. V., **85j:17007**
- (Pontyagin, L. S.) See Moody, R. V., **85j:17007**
- Ruegg, H. See Bars, I.; et al., **85i:17006**
- Sharp, R. T. See Giroux, Y.; et al., **85i:17008**
- (Shibanov, A. S.) See Moody, R. V., **85j:17007**
- (Tyapkin, A. A.) See Moody, R. V., **85j:17007**
- Zhelobenko, D. P.  $S$ -algebras and Verma modules over reductive Lie algebras. (Russian) **85f:17004**
- $Z$ -algebras over reductive Lie algebras. (Russian) **85j:17009**

## secondary classifications (17B10)

- Abud, M. (with Anastaze, G.; Eckert, P.; Ruegg, H.) Counterexample to Michel's conjecture. **85h:81043**
- Anastaze, G. See Abud, M.; et al., **85h:81043**
- Angelopoulos, E. On the unitary dual of  $\mathrm{SO}_0(2r, 2)$ . **85d:22035**

- Beilinson, Alexander (with Bernstein, Joseph N.) A generalization of Casselman's submodule theorem. **85c:22024**
- Bernstein, Joseph N. See Beilinson, Alexander, **85c:22024**
- Cahn, Robert N. ★ Semisimple Lie algebras and their representations. **85j:17003**
- Dahumadil'daev, A. S. Irreducible representations of strongly solvable Lie algebras over a field of positive characteristic. (Russian) **85k:17008**
- Eckert, P. See Abud, M.; et al., **85h:81043**
- Fegan, H. D. (with Peterson, Stephen P.) Kostant's weighting factor in Macdonald's identities. **85i:22023**
- Frank, Alejandro (with Wolf, K. B.) Lie algebras for potential scattering. **85c:81045**
- Gaskell, R. W. Character generators for compact semisimple Lie groups. **85e:22032**
- Hasewinkel, Michiel Lectures on invariants, representations and Lie algebras in systems and control theory. **85b:93003**
- Inosemtsev, V. I. ★ О расширении класса интегрируемых динамических систем, связанных с полупростыми алгебрами Ли. (Russian) [Extension of the class of integrable dynamical systems connected with semisimple Lie algebras] **85c:58049**
- Joseph, A. Completion functors in the  $\mathcal{O}$  category. **85j:17012**
- On the variety of a highest weight module. **85j:17014**
- Kostant, Bertram On finite subgroups of  $\mathrm{SU}(2)$ , simple Lie algebras, and the McKay correspondence. **85h:22026**
- Krylyuk, Ya. S. Maximum dimension of irreducible representations of simple Lie  $p$ -algebras of Cartan series  $S$  and  $H$ . (Russian) **85k:17009**
- Lê Ngọc Tuyên Commutative collections of functions on orbits in general position of finite-dimensional Lie algebras. (Russian) **85h:58041**
- Lepowaky, James (with Wilson, Robert Lee) The structure of standard modules. I. Universal algebras and the Rogers-Ramanujan identities. **85m:17008**
- Morita, Jun Root systems and orthogonal groups of root lattices. **85i:17019**
- Neidhardt, Wayne Irreducible subquotients and imbeddings of Verma modules. **85j:17026**
- Nguyễn Văn Hiếu On the theory of representations of a superalgebra of extended supersymmetry. (Russian. English summary) **85j:81092**
- Peterson, Stephen P. See Fegan, H. D., **85i:22023**
- Proctor, Robert A. Shifted plane partitions of trapezoidal shape. **85b:05021**
- Ruegg, H. See Abud, M.; et al., **85h:81043**
- Scheunert, M. Graded tensor calculus. **85h:17009a**
- Casimir elements of  $\varepsilon$  Lie algebras. **85h:17009b**
- Eigenvalues of Casimir operators for the general linear, the special linear and the orthosymplectic Lie superalgebras. **85h:17009c**
- Tauvel, Patrice Sur la bicontinuité de l'application de Dixmier pour les algèbres de Lie résolubles. (English summary) [Bicontinuity of the Dixmier map for solvable Lie algebras] **85b:17007**
- Trofimov, V. V. Extensions of Lie algebras and Hamiltonian systems. (Russian) **85h:58066**
- Wakimoto, Minoru (with Yamada, Hirofumi) Irreducible decompositions of Fock representations of the Virasoro algebra. **85i:17020**
- Wilson, Robert Lee See Lepowaky, James, **85m:17008**
- Wolf, K. B. See Frank, Alejandro, **85c:81045**
- Yamada, Hirofumi See Wakimoto, Minoru, **85i:17020**

## 17B15 Representations, analytic theory

- Angelopoulos, E. Unitarisability des modules de Harish-Chandra et produits tensoriels de  $\mathfrak{l}$ -modules. Le cas de  $\mathfrak{so}(p, q)$ . [Unitarizability of Harish-Chandra modules and tensor products of  $\mathfrak{l}$ -modules. The case of  $\mathfrak{so}(p, q)$ ] **85d:17004**
- Gruber, Bruno (with Lenczewski, Romuald) Indecomposable representations of the Lorentz algebra in an angular momentum basis. **85d:17005**
- (with Klimyk, A. U.) Matrix elements for indecomposable representations of complex  $\mathfrak{su}(2)$ . **85e:17009**
- Klimyk, A. U. See Gruber, Bruno, **85e:17009**
- Lenczewski, Romuald See Gruber, Bruno, **85d:17005**
- Papantonopoulos, E. A computational procedure for calculating matrix elements and Clebsch-Gordan coefficients of simple Lie algebras. **85c:17004**

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- Ginsburg, Victor Intégrales sur les orbites nilpotentes et représentations des groupes de Weyl. (English summary) [Nilpotent orbital integrals and representations of Weyl groups] **85b:22019**
- Ginsburg, V. A. Integrals over nilpotent orbits and representations of Weyl groups. (Russian) **85b:22020**
- Nishijima, Kasuhiko Representations of BRS algebra. **85i:81080**
- Panyukov, V. V. Representations of Lie algebras in positive characteristic. (Russian. English summary) **85a:17008**

## 17B20 Simple, semisimple, reductive algebras (roots)

- Chen, Zhong Hu Real principal three-dimensional subalgebras. (Chinese) (Not in MR)
- Farnsteiner, Rolf ★  $\mathfrak{ad}$ -halbeinfache Lie-Algebren. (German) [ $\mathfrak{ad}$ -semisimple Lie algebras] **85m:17006**
- Hiral, Takehiko On semisimple Lie algebras over algebraically closed fields. **85h:17005**
- Jiang, Jia Pu A note on Z. D. Yan's diagrams. (Chinese) (Not in MR)
- Kempken, Gisela Induced conjugacy classes in classical Lie algebras. **85i:17009**
- Kostrikin, A. I. (with Kostrikin, I. A.; Ufnarovskii, V. A.) On the uniqueness of orthogonal decompositions of Lie algebras of types  $A_n$  and  $C_n$ . I, II. (Russian) **85j:17010**
- Kostrikin, I. A. See Kostrikin, A. I.; et al., **85j:17010**
- Li, Gen Dao On the Cartan groups of a real semisimple Lie algebra. **85b:17094**
- Lu, Cai Hui Characteristic semisimple Lie algebras and completely semisimple Lie algebras over any field. **85e:17010**
- Sekiguchi, Jirō A counterexample to a problem on commuting matrices. **85i:17010**
- Invariant vector fields on a simple Lie algebra under the adjoint action. **85c:17005**

Ufnarovich, V. A. See Kostrikin, A. I.; et al., 85j:17010

secondary classifications (17B20)

Borevich, Z. I. (with Vavilov, N. A.) Arrangement of subgroups containing a group of block diagonal matrices in the general linear group over a ring. (Russian) 85j:20048b (with Vavilov, N. A.) The net determinant over a Bezoutian local ring. (Russian) 85j:20046c

(with Kolotilina, L. Yu. The subnormalizer of net subgroups in the general linear group over a ring. (Russian) 85j:20046d

Cahn, Robert N. ★ Semisimple Lie algebras and their representations. 85j:17003

Farkas, Daniel R. Multiplicative invariants. 85h:16042

Gruber, Bruno See Lorente, M., 85j:17006

Hassewinkel, Michiel Lectures on invariants, representations and Lie algebras in systems and control theory. 85b:93063

Kiranagi, Basavanappa S. Semisimple Lie algebra bundles. 85b:55034

Kolotilina, L. Yu. See Borevich, Z. I., 85j:20046d

Krylyuk, Ya. S. Maximum dimension of irreducible representations of simple Lie  $p$ -algebras of Cartan series  $S$  and  $H$ . (Russian) 85k:17009

Kumstov, M. I. Graded Lie algebras with null component containing sum of commuting ideals. 85j:17029

Lorente, M. (with Gruber, Bruno) Construction of extremal vectors for Verma submodules of Verma modules. 85j:17006

Nash, Patrick L. Identities satisfied by the generators of the Dirac algebra. 85d:22039

Rassilier, H. Lattice degeneracies of fermions. 85g:81174

Sekiguchi, Jirō The nilpotent subvariety of the vector space associated to a symmetric pair. 85d:14006

Shen, Guang Yu New simple Lie algebras of characteristic  $p$ . 85k:17010

Smith, S. P. Krull dimension of factor rings of the enveloping algebra of a semisimple Lie algebra. 85a:17007

Vavilov, N. A. Parabolic subgroups of the Chevalley group over a commutative ring. (Russian) 85j:20048a

See also Borevich, Z. I., 85j:20046b and 85j:20046c

Wilson, Robert Lee Classification of the restricted simple Lie algebras with toral Cartan subalgebras. 85c:17007

## 17B25 Exceptional algebras

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Atsuyama, Kenji Another construction of real simple Lie algebras. 85c:17009

Okubo, Susumu (with Patera, J.) General indices of simple Lie algebras and symmetrized product representations. 85c:17008

Patera, J. See Okubo, Susumu, 85c:17008

## 17B30 Solvable, nilpotent algebras

Bakhturin, Yu. A. On basic and axiomatic ranks of nilpotent varieties of Lie algebras. 85j:17011

Dahlberg, Randall P. Injective hulls of Lie modules. 85i:17011

Drenski, V. S. Solvable Lie  $A$ -algebras. (Russian) 85j:17012

Geln, A. G. Levels of solvability of lattice-isomorphic Lie algebras. (Russian) 85b:17005

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Kawamoto, Naoki Finitely generated subalgebras of generalized solvable Lie algebras. 85a:17006

Mlahchenko, S. P. Varieties of hypercentral-metabelian Lie algebras over a field of characteristic zero. (Russian) 85i:17005

Sentharubane, L. J. Infinite families of nilpotent Lie algebras. 85b:17006

Tauvel, Patrice Sur la bicontinuité de l'application de Dixmier pour les algèbres de Lie résolubles. (English summary) [Bicontinuity of the Dixmier map for solvable Lie algebras] 85b:17007

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Dahumadil'daev, A. S. Irreducible representations of strongly solvable Lie algebras over a field of positive characteristic. (Russian) 85k:17008

Panyukov, V. V. The center of the universal enveloping algebra of a completely solvable Lie algebra. (Russian) 85j:17015

Smirnov, M. B. The group of units of an associative ring satisfying the identity of Lie solvability. (Russian. English summary) 85a:16010

## 17B35 Universal enveloping algebras, imbeddings

Barbasch, Dan Filtrations on Verma modules. 85j:17013

Basileato, Isabelle Sésionale Structure de  $U(g)^f$  pour certains groupes classiques. (English summary) [Structure of  $U(g)^f$  for some classical groups] 85d:17007

Benabdallah, Abdel-lah Générateurs de l'algèbre  $U(G)^K$ , avec  $G = SO(m)$  ou  $SO_0(1, m-1)$  et  $K = SO(m-1)$ . [Generators of the algebra  $U(G)^K$ , with  $G = SO(m)$  or  $SO_0(1, m-1)$  and  $K = SO(m-1)$ ] (Not in MR)

Joseph, A. On the classification of primitive ideals in the enveloping algebra of a semisimple Lie algebra. 85b:17008

Completion functors in the  $\mathcal{O}$  category. 85i:17012

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Panyukov, V. V. The center of the universal enveloping algebra of a completely solvable Lie algebra. (Russian) 85j:17015

Rakviashvili, G. G. The crossed enveloping algebra of a Lie  $p$ -algebra. (Russian. English and Georgian summaries) 85j:17016

Rasmylov, Yu. P. Central polynomials in irreducible representations of a semisimple Lie algebra. (Russian) 85d:17008

Smith, S. P. Krull dimension of factor rings of the enveloping algebra of a semisimple Lie algebra. 85a:17007

Warfield, Robert B., Jr. The Gelfand-Kirillov dimension of a tensor product. 85f:17006

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Angelopoulos, E. On the unitary dual of  $SO_0(2r, 2)$ . 85d:22035

Brown, K. A. Localisation, bimodules and injective modules for enveloping algebras of solvable Lie algebras. (French summary) 85m:16005

Chari, Vyjayanthi (with Hanganov, S.) On the Harish-Chandra homomorphism for infinite-dimensional Lie algebras. 85m:17007

Edwards, S. A. See Gould, M. D., 85k:17006

Flath, Daniel E. On  $so_3$  and the tensor operators of  $sl_3$ . 85i:17007

Gould, M. D. (with Edwards, S. A.) Enveloping algebra annihilators and projection techniques for finite-dimensional cyclic modules of a semisimple Lie algebra. 85k:17006

Gruber, Bruno (with Lenczewski, Romuald) Indecomposable representations of the Lorentz algebra in an angular momentum basis. 85d:17005

Hudry, A. Dimension de Gelfand-Kirillov et décomposition primaire bilatère dans certaines algèbres filtrées. [Gelfand-Kirillov dimension and bilateral primary decomposition in some filtered algebras] 85k:16025

Hanganov, S. See Chari, Vyjayanthi, 85m:17007

Irving, Ronald S. Primitive ideals of enveloping algebras over commutative rings. 85b:16033

Jategaonkar, Vasant A. A multiplicative analog of the Weyl algebra. 85k:16013

Lenczewski, Romuald See Gruber, Bruno, 85d:17005

Leveille, M. Casimir invariants for the eight-dimensional subgroups of the Poincaré group  $P(1, 4)$ . 85m:22013

Lusztig, George Left cells in Weyl groups. 85f:20035

Mallavin-Brammer, Marie-Paule Modules sans torsion et modules injectifs sur les algèbres de Lie résolubles. [Torsion-free modules and injective modules over solvable Lie algebras] 85d:16009

Resco, Richard Affine domains of finite Gelfand-Kirillov dimension which are right, but not left, Noetherian. 85k:16047

Smith, S. P. Central localization and Gelfand-Kirillov dimension. 85k:16048

Gelfand-Kirillov dimension of rings of formal differential operators on affine varieties. 85d:16019

Zhelobenko, D. P.  $S$ -algebras and Verma modules over reductive Lie algebras. (Russian) 85f:17004

$Z$ -algebras over reductive Lie algebras. (Russian) 85j:17009

Conference:

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## 17B40 Automorphisms, derivations, other operators

secondary classifications (17B40)

Aldoray, Fahih A. M. Subideals of the join of permutable Lie algebras. 85c:17003

Farnsteiner, Rolf On the structure of simple-semiabelian Lie algebras. 85c:17005

Fel'dman, G. L. Exact Mayer-Vietoris sequences for free products of Lie algebras with an amalgamated subalgebra. (Russian) 85i:17013

Serganova, V. V. Automorphisms of simple Lie superalgebras. (Russian) 85k:17019

Smith, S. P. Gelfand-Kirillov dimension of rings of formal differential operators on affine varieties. 85d:16019

## 17B45 Lie algebras of linear algebraic groups [See also 14Lxx and 20Gxx.]

secondary classifications (17B45)

Koppinen, Markku Decomposing and lifting hyperalgebras. 85c:16017

Shoji, T. On the Green polynomials of classical groups. 85f:20032

Shudo, Takefumi On the relatively smooth subhyperalgebras of hyperalgebras. 85e:14069

Spaltenstein, N. Nilpotent classes in Lie algebras of type  $F_4$  over fields of characteristic 2. 85g:20056

Takeuchi, Mitsuhiro Generators and relations for the hyperalgebras of reductive groups. 85d:14063

## 17B50 Modular Lie algebras

Block, Richard E. (with Wilson, Robert Lee) The restricted simple Lie algebras are of classical or Cartan type. 85k:17007

Dahumadil'daev, A. S. Irreducible representations of strongly solvable Lie algebras over a field of positive characteristic. (Russian) 85k:17008

Farnsteiner, Rolf Restricted Lie algebras with semilinear  $p$ -mappings. 85b:17010

Krylyuk, Ya. S. Maximum dimension of irreducible representations of simple Lie  $p$ -algebras of Cartan series  $S$  and  $H$ . (Russian) 85k:17009

Panyukov, V. V. Representations of Lie algebras in positive characteristic. (Russian. English summary) 85a:17008

Shen, Guang Yu New simple Lie algebras of characteristic  $p$ . 85k:17010

Strade, Helmut Zur Darstellungstheorie von Lie-Algebren. [On the representation theory of Lie algebras] 85g:17002

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Wong, Kwok Chi The radical of the restricted universal enveloping algebra of  $A_1$ . 85a:17009

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Kusnetsov, M. I. Graded Lie algebras with null component containing sum of commuting ideals. 85j:17029

Lu, Cai Hui Characteristic semisimple Lie algebras and completely semisimple Lie algebras over any field. 85e:17010

Panyukov, V. V. The center of the universal enveloping algebra of a completely solvable Lie algebra. (Russian) 85j:17015

#### 17B55 Homological methods in Lie algebras

Arnal, D. Simultaneous deformations of a Lie algebra and its modules. 85b:17011

Feldman, G. L. Exact Mayer-Vietoris sequences for free products of Lie algebras with an amalgamated subalgebra. (Russian) 85i:17013

Mitra, Bani (with Tripathy, K. C.) The cohomology of the generalized Lie algebras. 85k:17011

Tripathy, K. C. See Mitra, Bani, 85k:17011

secondary classifications (17B55)

Kassel, Christian (with Loday, Jean-Louis) Extensions centrales d'algèbres de Lie. (English summary) [Central extensions of Lie algebras] 85g:17004

Loday, Jean-Louis See Kassel, Christian, 85g:17004

Rakviashvili, G. G. The crossed enveloping algebra of a Lie  $p$ -algebra. (Russian. English and Georgian summaries) 85j:17016

Shibata, Katsuyuki On Haefliger's model for the Geffand-Fuks cohomology. 85k:57033

#### 17B56 Cohomology of Lie algebras

De Wilde, M. (with Lecomte, Pierre B. A.) Cohomology of the Lie algebra of smooth vector fields of a manifold, associated to the Lie derivative of smooth forms. 85j:17017

Feigin, B. L. Cohomology of contact Lie algebras. (Russian) 85b:17012

(with Tsyan, B. L.) Cohomology of Lie algebras of generalized Jacobi matrices. (Russian) 85c:17008

Semi-infinite homology of Lie, Kac-Moody and Virasoro algebras. (Russian) 85g:17003

Fuks, D. B. Stable cohomology of a Lie algebra of formal vector fields with tensor coefficients. (Russian) 85d:17009

Kassel, Christian (with Loday, Jean-Louis) Extensions centrales d'algèbres de Lie. (English summary) [Central extensions of Lie algebras] 85g:17004

Lecomte, Pierre B. A. See De Wilde, M., 85j:17017

Loday, Jean-Louis (with Quillen, Daniel) Homologie cyclique et homologie de l'algèbre de Lie des matrices. (English summary) [Cyclic homology and homology of the Lie algebra of matrices] 85d:17010

See also Kassel, Christian, 85g:17004

Mitra, Bani (with Sitaram, B. R.; Tripathy, K. C.) Cohomology of Lie algebras with a nontrivial center. 85k:17012

Quillen, Daniel See Loday, Jean-Louis, 85d:17010

Sitaram, B. R. See Mitra, Bani; et al., 85k:17012

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- Zassenhaus, Hans J. See Djoković, Dragomir; et al., 85g:15018

## 17Cxx Jordan algebras (commutative)

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- Drenski, V. S. Polynomial identities in simple Jordan algebras. 85e:17013
- Sverchkov, S. R. Solvable Jordan algebras of index 2. (Russian) 85g:17009

## 17C10 Structure theory

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- Cheremisin, A. I. Jordan kinematics. (Russian) 85g:17011
- Jacobson, N. Forms of the generic norm of a separable Jordan algebra. 85g:17012
- Koecher, Max Von Matrizen zu Jordan-Tripelsystemen. [From matrices to Jordan triple systems] 85a:17014
- McCrimmon, Kevin Invariance of Jordan radicals. 85h:17011
- Amitsur shrinkage of Jordan radicals. 85k:17022
- Pchelintsev, S. V. Absolute zero divisors of special Jordan algebras. (Russian) 85i:17027
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- Chekanu, G. P. Local finiteness in Shirshov's sense. (Russian) 85f:16010
- Patera, J. (with Rousseau, Christiane) Versal deformations of elements of classical Jordan algebras. 85g:17013
- Rousseau, Christiane See Patera, J., 85g:17013
- Sverchkov, S. R. Solvable Jordan algebras of index 2. (Russian) 85g:17009

## 17C20 Simple, semisimple algebras

## secondary classifications (17C20)

- Allison, B. N. (with Faulkner, John R.) A Cayley-Dickson process for a class of structural algebras. 85i:17001
- Faulkner, John R. See Allison, B. N., 85i:17001
- Korányi, Adam Monotone functions on formally real Jordan algebras. 85i:17028
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- Racine, Michel L. See Petersen, Holger P., 85i:17029
- Zel'manov, E. I. Prime Jordan algebras. II. (Russian) 85d:17011

## 17C30 Automorphisms, derivations, other operators

- Patera, J. (with Rousseau, Christiane) Versal deformations of elements of classical Jordan algebras. 85g:17013
- Rousseau, Christiane See Patera, J., 85g:17013

## 17C35 Formally real domains of positivity [See also 32Nxx.]

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Günaydin, M. (with Sierra, G.; Townsend, P. K.) Exceptional supergravity theories and the magic square. 85m:83077

Hogben, Leslie (with Kac, Victor G.) Erratum: "Classification of simple  $Z$ -graded Lie superalgebras and simple Jordan superalgebras" [Comm. Algebra 5 (1977), no. 13, 1375-1400; MR 58 #16806] by Kac. 85a:17011

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Townsend, P. K. See Günaydin, M.; et al., 85m:83077

## 17C50 Jordan rings associated with other structures [See also 16A68, 17B60.]

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Pechintsev, S. V. Meta-ideals of alternative algebras. (Russian) 85d:17013

Piacentini Cattaneo, Giulia Maria (with Hentzel, Irvin Roy) On prime right alternative algebras and alternators. 85b:17018

Thedy, Armin Radicals of right alternative and Jordan rings. 85i:17030

Vernikov, B. M. (with Volkov, M. V.) Letter to the editors: "Almost chain varieties of alternative rings" [Ural. Gos. Univ. Mat. Zap. 11 (1979), no. 3, 22-39; MR 82a:17012]. (Russian) 85c:17011

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Rodríguez-Palacios, Angel Nonassociative normed algebras spanned by Hermitian elements. 85c:46068

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Wene, G. P. A construction relating Clifford algebras and Cayley-Dickson algebras. 85m:15016

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## secondary classifications (17D10)

Ko, Young So (with Myung, Hyo Chul) On a class of Mal'cev-admissible algebras. (Korean summary) 85k:17025

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Oehmke, Robert H. The geometry of Lie-admissible algebras. II. 85c:58008

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Micali, Artibano (with Campos, Tânia M. M.; Costa e Silva, Maria C.; Ferreira, Sílvia M. M.; Costa, Roberto C. F.) Dérivations dans les algèbres génétiques. [Derivations in genetic algebras] 85g:17014



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- Itoh, Yoshiaki Representation of random collision model by nonassociative algebras. (Japanese. English summary) 85j:92012  
 Lyubich, Yu. I. ★ Математические структуры в популяционной генетике. (Russian) [Mathematical structures in population genetics] 85i:92001

17D99 None of the above, but in this section

- Ko, Young So (with Myung, Hyo Chul) On a class of Mal'cev-admissible algebras. (Korean summary) 85k:17025  
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- Liu, Shao Xue Generalized Hamilton algebras. (Chinese) 85e:17004  
 Wardlaw, William P. Finitely associative groupoids and algebras. 85e:20044

## 18-XX CATEGORY THEORY, HOMOLOGICAL ALGEBRA

18-01 Elementary exposition; textbooks

- Adámek, J. ★ Theory of mathematical structures. 85c:18001

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- Skornyakov, L. A. ★ Элементы общей алгебры. (Russian) [Elements of general algebra] 85k:00002

18-02 Advanced exposition (research surveys, monographs, etc.)

secondary classifications (18-02)

- Blass, Andreas The interaction between category theory and set theory. 85m:03045  
 (Ehresmann, André Charles) See Ehresmann, Charles, 85b:01098  
 Ehresmann, Charles Œuvres complètes et commentées. II-2. Catégories ordonnées. Applications des ordres en topologie. [Complete and annotated works. II-2. Ordered categories. Applications of order in topology] 85b:01098  
 Shimada, Nobuo (with Shimakawa, Kazhisa) Algebraic K-theory—its homotopy-theoretic aspect. (Japanese) 85b:18010  
 Shimakawa, Kazhisa See Shimada, Nobuo, 85b:18010

18-06 Proceedings, conferences, etc.

- (Bak, Anthony) See Algebraic K-theory, number theory, geometry and analysis, 85g:18001  
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18Axx General theory of categories and functors

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- Adámek, J. ★ Theory of mathematical structures. 85c:18001

18A05 Definitions, generalizations

- Velinov, Y. P. Polycategories and recursiveness. (See 85i:20006)  
 Combinatorial arrows in a polycategory. (See 85i:20006)

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- Malan, S. W. A theory for structures developed as a generalization of topological categories. 85k:18001  
 Reggiani, Cristina A characteristic condition for the existence of a right biadjoint functor. (Italian. English summary) 85a:18004  
 18A10 Graphs, diagram schemes, precategories, neocategories [See also 20Lxx.]

- Burroni, Albert Algèbres graphiques. Suite: les bidules. [Graph algebras. Continuation: bidules (adjoint pairs of endofunctors)] 85b:18002  
 Höppler, Michael ★ Diagramme über geordneten Mengen und einige Analogien zur Theorie abelscher Gruppen. (German) [Diagrams over ordered sets and some analogies to the theory of abelian groups] 85c:18002

18A15 Foundations, relations to logic and deductive systems [See also 03-XX.]

- Malan, S. W. A theory for structures developed as a generalization of topological categories. 85k:18001

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- Bloom, Stephen L. Iterative and metric algebraic theories. 85b:03049  
 Girard, Jean-Yves (with Vauzelle, Jacqueline) Functors and ordinal notations. I. A functorial construction of the Veblen hierarchy. 85j:03098  
 Lambek, J. (with Scott, P. J.) Aspects of higher order categorical logic. 85i:03196  
 Scott, P. J. See Lambek, J., 85i:03196  
 Vauzelle, Jacqueline See Girard, Jean-Yves, 85j:03098

18A20 Epimorphisms, monomorphisms, special classes of morphisms, null morphisms, factorization (bicategories)

- Botnaru, D. V. Relative torsion in theories of categories. (Russian) 85k:18002  
 Hug, S. A. Generalized epimorphism, monomorphism and bimorphism properties of categories. 85f:18001  
 Kiss, E. W. (with Márki, L.; Pröhle, P.; Tholen, W.) Categorical algebraic properties. A compendium on amalgamation, congruence extension, epimorphisms, residual smallness, and injectivity. 85k:18003  
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- Dyckhoff, Roy Total reflections, partial products, and hereditary factorizations. 85b:34018  
 Joyce, David Generalized chromatic polynomials. 85e:05009  
 M5bus, Axel Alexandrov compactification of relational algebras. 85b:18006  
 Passtor, Ana Epis of some categories of Z-continuous partial algebras. 85c:18005a  
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18A22 Special properties of functors (faithful, full, etc.)

- Greve, Georg (with Saigeti, Jenő; Tholen, W.) Lifting tensor products along nonadjoint functors. 85a:18001  
 Park, Pyung U. On G-sets and G-spaces. (Korean summary) 85d:18002  
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- Sekanina, M. Hamiltonian functors. 85i:05162

18A23 Natural morphisms, dinatural morphisms

- Dowker, C. H. Isomorphism of categories. 85a:18002

18A25 Functor categories, comma categories

- Shul'geifer, E. G. Mac Lane super comma categories. (Russian) 85j:18001  
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 Yoshida, Tomoyuki Projective  $\Gamma$ -sets. 85a:18003

18A30 Limits and colimits (products, sums, directed limits, pushouts, fiber products, equalizers, kernels, ends and coends, etc.)

- Andréka, H. (with Némethi, István) Direct limits and filtered colimits are strongly equivalent in all categories. 85d:18003  
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- Michalaki, Jacek On the category of n-groups. 85m:20101  
 Free products of n-groups. 85m:20102  
 Porter, Timothy The derived functors of lim and protorion modules. 85d:16022  
 Sain, I. Applicability of category-theoretic notions of ultraproducts. (Hungarian) 85j:03116  
 Street, Ross The family approach to total cocompleteness and toposes. 85f:18003

**18A32** Factorization of morphisms (via images, coimages, dominions, codominions), substructures, quotient structures, congruences, amalgams

**Thelen, W.** Factorizations, localizations, and the orthogonal subcategory problem. 85i:18002

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**Gluli, Eraldo** Pro-reflective subcategories. 85k:18006

**Reichel, Horst** Homomorphism theorem for equationally partial algebras. 85j:08013

**Street, Ross** The family approach to total cocompleteness and toposes. 85f:18003

**18A35** Categories admitting limits (complete categories), functors commuting with limits, continuous functors, completions

**Vásquez, Roberto** Connectedness in various subcategories of topological categories. (Spanish) 85h:18001

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**Kelly, G. M.** A note on the generalized reflexion of Guitart and Lair. 85d:18004

**Street, Ross** The family approach to total cocompleteness and toposes. 85f:18003

**18A40** Adjoint functors (representable functors, universal constructions, reflective subcategories, reflections, etc.), constructions of adjoints (Kan extensions, etc.)

**Diers, Yves** Une construction universelle des spectres, topologies spectrales et faisceaux structuraux. [A universal construction of spectra, spectral topologies and structure sheaves] 85i:18003

**Hoffmann, Rudolf-E.** Co-well-powered reflective subcategories. 85f:18002

**Kelly, G. M.** A note on the generalized reflexion of Guitart and Lair. 85d:18004

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**Srivastava, Arun K.** A note on local adjointness. (See 85g:00023)

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**Saigeti, Jenő** A note on reflective subcategories defined by partial algebras. 85m:18001

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**Morphismes spéciales en catégories floues et immersions. II. (Romanian summary) [Special morphisms in fuzzy categories and immersions. II.] 85g:18005b**

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**Wu, Li Sheng** See Yé, Yong Xi. (Not in MR)

**Yé, Yong Xi** (with Wu, Li Sheng) A property of quasikernel families. (Chinese) (Not in MR)

Union and intersection of a quasikernel family. (Not in MR)

Union and intersection of a quasikernel family. (Chinese) (Not in MR)

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**Ernst, Marcel** Adjunctions and standard constructions for partially ordered sets. 85d:06002

**Jeltek, Jaroslav** (with Nešetřil, Jaroslav) Ramsey varieties. 85c:05006

**Klas, E. W.** (with Márki, L.; Prühle, P.; Tholen, W.) Categorical algebraic properties. A compendium on amalgamation, congruence extension, epimorphisms, residual smallness, and injectivity. 85k:18003

**Márki, L.** See Klas, E. W.; et al., 85k:18003

**Nešetřil, Jaroslav** See Jeltek, Jaroslav, 85c:05006

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**Tholen, W.** See Klas, E. W.; et al., 85k:18003

**18Bxx** Special categories

**18B10** Category of relations, additive relations

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**Gisin, V. B.** See Tsalenko, M. Sh.; et al., 85k:18004

**Kudo, Tatsuji** On the theory of relations in abelian categories. 85g:18006

**Raikov, D. A.** See Tsalenko, M. Sh.; et al., 85k:18004

**Tsalenko, M. Sh.** (with Gisin, V. B.; Raikov, D. A.) Ordered categories with involution. 85k:18004

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**18B15** Imbedding theorems, universal categories [See also 18E20.]

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**18B20** Categories of machines, automata, operative categories [See also 03D05, 68Qxx.]

**Adámek, J.** See Trnková, V., 85g:18009

**Alguero García, Alfredo** (with Bahamonde Rionda, Antonio) Systems of factorizations and the Nerode realization for machines in a category. (Spanish. English summary) 85j:18003

**Bahamonde Rionda, Antonio** ★ Mínima realización para máquinas en una categoría. (Spanish) [Minimal realization of machines in a category] 85j:18004

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**Betti, Renato** (with Kasangian, Stefano) A quasi-universal realization of automata. (Italian summary) 85g:18007

**Hasse, Maria** Über eine Anwendung der Theorie der allgemeinen Produkte von Kategorien. [On an application of the theory of general products of categories] 85g:18008

**Kasangian, Stefano** (with Kelly, G. M.; Rossi, Fabio) Cofibrations and the realization of nondeterministic automata. 85a:18005

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**Nolta, Cornelia** Generalized rank conditions for systems in a category. 85d:18005

**Rossi, Fabio** See Kasangian, Stefano; et al., 85a:18005

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### 18C10 Theories (e.g. algebraic theories), structure, and semantics [See also 03-XX.]

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**18C15** Triples (= standard construction, monad or triad), algebras for a triple, homology and derived functors for triples [See also 18Gxx.]

**Davis, Robert Clay** Combinatorial examples in universal coalgebra. 85i:18010a  
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**Mersénich, Wolfgang** See Adámek, J., 85i:18011

**Möbus, Axel** Alexandrov compactification of relational algebras. 85b:18008

**Whitney, Stephen** (with Hatcher, William S.) Characterizing categories of algebras. 85k:18009

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**18D05** Double categories, 2-categories, bicategories, hypercategories

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**Topencharov, V.** (with Arnautov, Ya. N.) On an  $[n]$ -arisation of categories. (See 85i:20005)

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**Mitchell, Barry** Low-dimensional group cohomology as monoidal structures. 85a:18011

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**Pedicchio, Maria Cristina** (with Rossi, Fabio) Monoidal closed structures for topological spaces: counter-example to a question of Booth and Tillotson. 85k:18010

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**Kriegel, Andreas** Eine kartesisch abgeschlossene Kategorie glatter Abbildungen zwischen beliebigen lokal konvexen Vektorräumen. (English summary) [A Cartesian-closed category of smooth mappings between arbitrary locally convex vector spaces] 85c:58015

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**Gray, John W.** The representation of limits, lax limits and homotopy limits as sections. 85k:18011

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Veldsman, S. A categorical approach to largest and smallest connectednesses and disconnectednesses. 85k:18012

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Veldsman, S. On Brown-McCoy radical classes in categories. 85c:16015

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Tholen, W. See Klas, E. W.; et al., 85k:18003

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## 18F10 Grothendieck topologies [See also 14F20.]

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## 18F15 Abstract manifolds and fiber bundles [See also 55Rxx, 57Pxx.]

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Cherenack, P. Algebraic transversality. 85d:14001

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Ngô Van Quê (with Reyes, Gonzalo E.) Smooth functors and synthetic calculus. 85d:58006

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18Gxx Homological algebra [See also 55Uxx.]

18G05 Projectives and injectives [See also 13C10, 13C11, 16A50, 16A52.]

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Bracho, Javier. Haefliger structures and linear homotopy. 85d:57026

Brown, Ronald. An introduction to simplicial  $T$ -complexes. (See 85g:55028)

Dakin, M. K. Kan complexes and multiple groupoid structures. (See 85g:55028)

Grivel, Pierre-Paul. Fibrés algébriques de fibre donnée. (English summary) [Algebraic fibre bundles with given fibre] (See 85d:55001)

Joyal, A. (with Wraith, G.) Eilenberg-MacLane toposes and cohomology. 85k:18006

See also Wraith, G., 85h:18004

Skordev, Gencho S. Resolvents of a closed map. (Russian. English summary) 85d:18012

Wraith, G. Toposes and simplicial sets: the cohomological connection. 85h:18004

See also Joyal, A., 85k:18006

Esquisses mathématiques ★ Esquisses mathématiques. 32. [Mathematical sketches. 32] 85g:55028

Mathematical sketches ★ Esquisses mathématiques. 32. [Mathematical sketches. 32] 85g:55028

18G35 Chain complexes [See also 18E30, 55U15.]

Varadarajan, K. Projective approximations. 85a:18018

secondary classifications (18G35)

Schäfer, James A. Finite complexes and integral representations. II. 85m:55008

Sharko, V. V. Minimal resolvents and Morse functions. (Russian) 85b:57029

18G40 Spectral sequences, hypercohomology [See also 55Txx.]

Pirashvili, T. I. A spectral sequence of an epimorphism. I. (Russian. English summary) 85f:18009

secondary classifications (18G40)

Huỳnh Múi See Phạm Anh Minh, 85i:20051

Phạm Anh Minh (with Huỳnh Múi) The mod  $p$  cohomology algebra of the group  $M(p^n)$ . 85i:20051

18G50 Nonabelian homological algebra

secondary classifications (18G50)

Buono, José L. (with Torrecillas Jover, Blas) Noncommutative local cohomology. 85b:16025

Torrecillas Jover, Blas See Buono, José L., 85b:16025

18G55 Nonabelian homotopical algebra

secondary classifications (18G55)

Jardine, J. F. Fibrations of algebraic groups. 85i:14027

Miller, Haynes The Sullivan conjecture. 85a:55016

18G99 None of the above, but in this section

Madrecki, Andrzej Relation between the Shapley value and null group cohomology. 85i:18017

Pitiş, Gh. Sur les espaces de cohomologie de Rham abstraite. (Romanian summary) [On abstract of Rham cohomology spaces] (Not in MR)

Rodríguez García, Antonio A characterization of the zero class in the second balanced cohomology group. (Spanish. English summary) 85j:18012

secondary classifications (18G99)

Boue, Serge Homologie de certains ensembles ordonnés. (English summary) [Homology of certain ordered sets] 85k:20150

Brasselet, Jean-Paul Existence des classes de Chern en théorie bivalente. [Existence of Chern classes in bivalent theory] 85j:32019

Ch'én, Yung Ch'én On extension categories and Schur multipliers of profinite groups. 85d:20023a

Corrections to: "On extension categories and Schur multipliers of profinite groups". 85d:20023b

Chagashvili, G. S. The relation of  $D$ -functors to analogous functors. (Russian. English and Georgian summaries) 85g:55011

Iversen, Birger Cohomology of sheaves. 85m:55005

Kumbhøjkar, H. V. Colimits of universal complexes. 85i:13023

Construction of coproducts in categories of complexes. 85i:13024

Leonelli, Antonio Homotopies induced by actions. (Italian. English summary) 85c:18006

Mitchell, Barry Low-dimensional group cohomology as monoidal structures. 85a:18011

Phạm Anh Minh Théorie des invariants modulaires et algèbres de cohomologie des  $p$ -groupes extra-spéciaux. (English summary) [Modular invariants of the infinite symmetric group and cohomology algebra of the extra-special  $p$ -groups] 85b:20072

Prouté, Alain Sur la transformation d'Eilenberg-Mac Lane. (English summary) [On the Eilenberg-Mac Lane map] 85c:55016

Talelli, Olympia On groups with periodic cohomology after 1 step. 85c:20043

## 20-XX GROUP THEORY AND GENERALIZATIONS

20-00 Handbooks, dictionaries, and other reference works

secondary classifications (20-00)

Glazek, K. Bibliography of  $n$ -groups (polyadic groups) and some grouplike  $n$ -ary systems. 85j:20078

(Gleichgewicht, Boleśław) See Glazek, K., 85j:20078

Bibliography:

$n$ -groups See Glazek, K., 85j:20078

20-01 Elementary exposition; textbooks

Benson, C. T. See Grove, L. C., 85m:20001

Grove, L. C. (with Benson, C. T.) Finite reflection groups. 85m:20001

Litsman, Otto (with Sekanina, M.) Účítí grup ve fyzice. (Czech) [The use of groups in physics] 85h:20001

Rotman, Joseph An introduction to the theory of groups. 85f:20001

Sekanina, M. See Litsman, Otto, 85h:20001

secondary classifications (20-01)

Allenby, R. B. J. T. Rings, fields and groups. 85a:00001

Curtis, Morton L. Matrix groups. 85k:22001

Shorniyakov, L. A. Элементы общей алгебры. (Russian) [Elements of general algebra] 85k:00002

Spotorno, Bruno A mathematical model for a theory of color. (Italian) 85a:01034

Xie, Bang Jie Chouxiang daishuxue. (Chinese) [Abstract algebra] 85f:00002

20-02 Advanced exposition (research surveys, monographs, etc.)

Cornwell, J. F. Group theory in physics. Vol. I. 85m:20002a

Group theory in physics. Vol. II. 85m:20002b

Landrock, P. Finite group algebras and their modules. 85h:20003

Petrich, Mario Inverse semigroups. 85k:20001

Remeslennikov, V. N. (with Roman'kov, V. A.) Model-theoretic and algorithmic questions of group theory. (Russian) 85f:20002

Roman'kov, V. A. See Remeslennikov, V. N., 85f:20002

Segal, Daniel Polycyclic groups. 85h:20003

secondary classifications (20-02)

Bolokhov, A. A. See Lyakhovskii, V. D., 85i:22041

Deriziotis, D. I. Conjugacy classes and centralizers of semisimple elements in finite groups of Lie type. 85k:20139

Gilmer, Robert Commutative semigroup rings. 85e:20058

(Gruenberg, K. W.) See Group theory, 85k:20004

(Hall, Philip) See Group theory, 85k:20004

Karpilovsky, Gregory Commutative group algebras. 85a:16014

Lyakhovskii, V. D. (with Bolokhov, A. A.) Группы симметрии и элементарные частицы. (Russian) [Symmetry groups and elementary particles] 85i:22041

Ovayannikov, A. Ya. See Shevrin, L. N., 85b:20089

(Roseblade, J. E.) See Group theory, 85k:20004

Shevrin, L. N. (with Ovayannikov, A. Ya.) Semigroups and their subsemigroup lattices. 85b:20089

Zheleudev, I. S. Симметрия и ее приложения. (Russian) [Symmetry and its applications] 85e:00038

Festschrift:

Hall, Philip Group theory. 85k:20004

Group theory Group theory. 85k:20004

20-03 Historical (must also be assigned at least one classification number from Section 01)

secondary classifications (20-03)

(Brauer, Richard) See Olsson, Jörn B., 85d:20007

Chandler, Bruce (with Magnus, Wilhelm) The history of combinatorial group theory. 85c:01001

Charin, V. S. (with Protasov, I. V.) Group theory. (Russian) (See 85g:01004)

Chernikov, S. N. V. M. Glushkov's studies in group theory (on the occasion of his 60th birthday). (Russian) 85m:01038

(Glushkov, V. M.) See Chernikov, S. N., 85m:01038

(Grant, Hardy) See Wussing, Hans, 85c:01003

(Hoyer, P.) See Johnsen, Karsten, 85m:01044

Johnsen, Karsten Der "Untergruppensatz" von P. Hoyer—25 Jahre vor O. Schreier. [P. Hoyer's "subgroup theorem"—25 years ahead of O. Schreier] 85m:01044

Magnus, Wilhelm See Chandler, Bruce, 85c:01001

Olsson, Jörn B. Aus dem Nachlaß von Richard Brauer. (German) [From the Nachlass of Richard Brauer] 85d:20007

Protasov, I. V. See Charin, V. S., (85g:01004)

(Shenitzer, Abe) See Wussing, Hans, 85c:01003

Slipenko, A. K. Semigroup theory. (Russian) (See 85g:01004)

Wussing, Hans The genesis of the abstract group concept. 85c:01003

Birthday:

Glushkov, V. M. See Chernikov, S. N., 85m:01038

20-04 Explicit machine computation and programs (not the theory of computation or programming)

Atkinson, M. D. (with Hassan, R. A.; Thorne, M. P.) Group theory on a microcomputer. 85i:20001

Butler, Gregory On computing double coset representatives in permutation groups. 85k:20002

Felsch, Volkmar (with Sandlöbes, Günter) An interactive program for computing subgroups. 85k:20003

Godlevskii, A. B. See Letichevskii, A. A.; et al., 85d:20001

Hassan, R. A. See Atkinson, M. D.; et al., 85i:20001

Holt, D. F. The calculation of the Schur multiplier of a permutation group. 85h:20004

Krivoi, S. L. An algorithm to construct a basis of the intersection of finitely generated free groups. 85d:20002

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Sandlöbes, Günter See Felsch, Volkmar, 85k:20003

Thorne, M. P. See Atkinson, M. D.; et al., 85i:20001

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Campbell, Colin M. (with Robertson, E. F.) Presentations for the simple groups  $G$ ,  $10^6 < |G| < 10^8$ . 85m:20020

Conway, John H. An algorithm for double coset enumeration? 85j:20030

Makarov, A. V. Automation of the solution of problems on graphs having symmetry regularity. (Russian) 85e:05091

Newman, M. F. Groups of exponent six. 85m:20053

Nikolova, D. B. Computer calculation of a commutator identity in alternating groups. (Russian) 85m:20054

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Parker, R. A. The computer calculation of modular characters (the meat-axe). 85k:20041

Riley, Robert Applications of a computer implementation of Poincaré's theorem on fundamental polyhedra. 85b:20064

Robertson, E. F. See Campbell, Colin M., 85m:20020

Tokisawa, Masamichi (with Ohashi, Masakazu) Computations of the  $D$ -structure of finite order full transformation semigroups. 85f:20068

## 20-06 Proceedings, conferences, etc.

(Appel, K.) See Contributions to group theory, 85g:20002

(Atkinson, M. D.) See Computational group theory, 85g:20001

(Chernikov, S. N.) See Groups and systems of their subgroups, 85f:20004 and Structure of groups and subgroup characterizations, 85m:20003

(Cupona, G.) See Proceedings: Algebraic conference, 85i:20004 and Proceedings: Symposium on  $n$ -ary structures, 85i:20005

(Gruenberg, K. W.) See Group theory, 85k:20004

(Hall, Philip) See Group theory, 85k:20004

(Lajos, S.) See Notes on semigroups, 85i:20003

(Lyapin, E. S.) See Algebraic actions and orderings, 85a:20001 and Associative actions, 85i:20002

(Lyndon, R. C.) See Contributions to group theory, 85g:20002

(Merslyakov, Yu. I.) See Groups and other algebraic systems with finiteness conditions, 85f:20003

(Migliorini, Franco) See Proceedings: Conference on the theory of semigroups, 85g:20003

(Mijajlović, Zarko) See Proceedings: Algebraic conference, 85i:20004

(Milik, Svetosar) See Proceedings: Algebraic conference, 85i:20004

(Perić, V.) See Proceedings: Algebraic conference, 85i:20004

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(Roseblade, J. E.) See Group theory, 85k:20004

(Saitō, Tōru) See Proceedings: Symposium on semigroups, 85d:20003

(Schupp, Paul E.) See Contributions to group theory, 85g:20002

(Trenovski, B.) See Proceedings: Symposium on  $n$ -ary structures, 85i:20005

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Associative actions ★ Ассоциативные действия. (Russian) [Associative actions] 85i:20002

Belgrade ★ Proceedings of the third algebraic conference. 85i:20004

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Lyndon, Roger C. ★ Contributions to group theory. 85g:20002

Computational group theory ★ Computational group theory. 85g:20001

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Algebraic ★ Proceedings of the third algebraic conference. 85i:20004

Theory of semigroups ★ Atti del convegno di teoria dei semigrupp. (Italian) [Proceedings of the conference on the theory of semigroups] 85g:20003

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Symposium on semigroups ★ Proceedings of the 7th symposium on semigroups. 85d:20003

Seminar:

Finite groups ★ Séminaire sur les groupes finis. Tome II. (French) [Seminar on finite groups. Vol. II] 85i:20006

Siena ★ Atti del convegno di teoria dei semigrupp. (Italian) [Proceedings of the conference on the theory of semigroups] 85g:20003

Skopje ★ Proceedings of the symposium on  $n$ -ary structures. 85i:20005

Structure of groups and subgroup characterizations ★ Структура групп и их подгрупповая характеристика. (Russian) [The structure of groups and subgroup characterizations] 85m:20003

Symposium:

Computational group theory ★ Computational group theory. 85g:20001

$n$ -ary structures ★ Proceedings of the symposium on  $n$ -ary structures. 85i:20005

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secondary classifications (20-06)

(Greene, Curtis) See Combinatorics and algebra, 85k:00007

(Manocha, H. L.) See Algebra and its applications, 85g:00023

(Srivastava, Jaya) See Algebra and its applications, 85g:00023

Algebra and its applications ★ Algebra and its applications. 85g:00023

Algebraic groups and related topics ★ Algebraic groups and related topics. (Japanese) 85h:14001

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Combinatorics and algebra ★ Combinatorics and algebra. 85k:00007

Conference:

AMS-IMS-SIAM, combinatorics and algebra ★ Combinatorics and algebra. 85k:00007

New Delhi ★ Algebra and its applications. 85g:00023

Symposium:

Algebra and its applications ★ Algebra and its applications. 85g:00023

Algebraic groups and related topics ★ Algebraic groups and related topics. (Japanese) 85h:14001

## 20Axx Foundations

### 20A05 Axiomatics and elementary properties

Kaur, Gurprit See Singh, Prahlad, 85k:20005

Kratit, Sava On a theorem of Hanna Neumann. 85g:20004

Singh, Prahlad (with Kaur, Gurprit) On com-extension in groups. 85k:20005

secondary classifications (20A05)

Poompoulos, E. Some commutativity theorems for rings and groups. 85c:10045

Ryan, John Ten counterexamples in group theory. 85a:20011

### 20A10 Metamathematical considerations (For word problems, see 20F10.)

secondary classifications (20A10)

Apps, A. B. On  $\aleph_0$ -categorical class two groups. 85d:20031

Dagoev, V. D. Constructivizations of direct products of algebraic systems. (Russian) 85b:03076

Eklof, Paul C. Set theory and structure theorems. 85a:03061

Khlasimiev, N. G. Strongly constructive abelian  $p$ -groups. (Russian) 85e:03105

Remeslennikov, V. N. (with Roman'kov, V. A.) Model-theoretic and algorithmic questions of group theory. (Russian) 85f:20002

Roman'kov, V. A. See Remeslennikov, V. N., 85f:20002

### 20A15 Applications of logic to group theory

Grossberg, Rami (with Shelah, Saharon) On universal locally finite groups. 85c:20001

Shelah, Saharon See Grossberg, Rami, 85c:20001

secondary classifications (20A15)

Apps, A. B.  $\aleph_0$ -categorical finite extensions of Boolean powers. 85g:03051

Belyaev, V. Ya. Uncountable extensions of countable algebraically closed semigroups. (Russian) 85m:03025

Eda, Katsuya Almost-slender groups and Fuchs-44 groups. 85d:20056

Maier, Berthold J. Existentially closed torsion-free nilpotent groups of class three. 85m:03026

Noskov, G. A. The elementary theory of a finitely generated almost solvable group. (Russian) 85d:20029

Oger, Francis Cancellation and elementary equivalence of groups. 85e:03079

Poisat, Bruno Groupes stables, avec types génériques réguliers. [Stable groups with regular generic types] 85e:03082

Remeslennikov, V. N. (with Roman'kov, V. A.) Model-theoretic and algorithmic questions of group theory. (Russian) 85f:20002

Roman'kov, V. A. See Remeslennikov, V. N., 85f:20002

Schmitt, Peter H. The  $L^1$ -theory of profinite abelian groups. 85j:03049

### 20A99 None of the above, but in this section

Bhattacharya, Prabir See Mukherjee, N. P., 85m:20004

Mukherjee, N. P. (with Bhattacharya, Prabir) Fuzzy normal subgroups and fuzzy cosets. 85m:20004

Qi, Zhen Kai The direct product,  $L$ -product,  $L$ -fuzzy points and  $L_2$ -fuzzy groups of fuzzy groups. (Chinese) (Not in MR)

Isomorphism theorems for fuzzy groups, and fuzzy group series. (Chinese) (Not in MR)

Seena, Salvatore On fuzzy subgroups and fuzzy ideals under triangular norms. 85j:20001

Tang, Fu Cheng The structure of fuzzy subgroups of finite groups. (Chinese) 85b:20001

Yu, Yan Dong On some properties of fuzzy groups. (Chinese summary) 85j:20002

secondary classifications (20A99)

Abu Oseman, M. T. On the direct product of fuzzy subgroups. 85e:03128

Sherwood, Howard Products of fuzzy subgroups. 85a:03070

## 20Bxx Permutation groups

### 20B05 General theory for finite groups

Bianchi, Giuliana (with Cori, Robert) Colorings of hypermaps and a conjecture of Brenner and Lyndon. 85g:20005b

Brenner, J. L. (with Lyndon, R. C.) Permutations and cubic graphs. 85g:20005a

Cameron, Peter J. (with Saxl, J.) Permuting unordered subsets. 85e:20001

Cori, Robert See Bianchi, Giuliana, 85g:20005b

Jiang, Hao The shortest bases and the unshortenable bases of a permutation group. (Chinese. English summary) 85h:20005



Johnson, Kenneth Walter Loop transversals and the centraliser ring of a permutation group. 85i:20007

Keum, Byoung Joon A representation of the symmetric group. (Korean summary) 85a:20002

Lyndon, R. C. See Brenner, J. L., 85g:20006a

Owings, James C., Jr. Pólya's theorem for cosets. 85e:20003

Praeger, Cheryl E. Finite simple groups and finite primitive permutation groups. 85k:20006

On transitive permutation groups with a subgroup satisfying a certain conjugacy condition. 85e:20003

Romse, Christian Sur les points fixés par les involutions dans un groupe transitif: un cas particulier. [On points fixed by involutions in a transitive group: a particular case] 85k:20007

Saxl, J. See Cameron, Peter J., 85e:20001

Shen, Hong On the problem of the generation of the primitive permutation groups by permutation groups of lower degree. (Chinese. English summary) 85f:20005

Szász, Carol Bemerkung über das Vorzeichen einer Permutation. (Romanian summary) [Comment on the sign of a permutation] (Not in MR)

Ustimenko-Bakumovskii, V. A. Maximality of finite Chevalley groups acting on classes of conjugate maximal parabolic subgroups. (Russian) 85i:20008

Vusa, Dan Aspects mathématiques dans la théorie modale d'Anatol Vieru. III. [Mathematical aspects of the modal theory of Anatol Vieru. III] 85f:20006a

Aspects mathématiques dans la théorie modale d'Anatol Vieru. IV. [Mathematical aspects of the modal theory of Anatol Vieru. IV] 85f:20006b

#### secondary classifications (20B05)

Cameron, Peter J. (with Praeger, Cheryl E.; Saxl, J.; Seitz, Gary M.) On the Sims conjecture and distance transitive graphs. 85g:20006

Holt, D. F. The calculation of the Schur multiplier of a permutation group. 85h:20004

Kierlein, Joseph B. (with Starling, A. Gregory) On the reverse of a permutation. 85d:05008

Liebeck, Martin W. Some applications of the classification of finite simple groups to permutation group theory. 85a:20008

Praeger, Cheryl E. See Cameron, Peter J.; et al., 85g:20006

Saxl, J. See Cameron, Peter J.; et al., 85g:20006

Seitz, Gary M. See Cameron, Peter J.; et al., 85g:20006

Starling, A. Gregory See Kierlein, Joseph B., 85d:05008

#### 20B07 General theory for infinite groups

André, Johannes Über Kennzeichnungen zweifach transitiver Permutationsgruppen. [On characterizations of doubly transitive permutation groups] 85k:20008

Čelakovský, N. See Čupona, G.; et al., 85j:20003

Čupona, G. (with Samardžiski, A.; Čelakovský, N.) Roots of permutations. 85j:20003

Droste, Manfred Products of conjugacy classes of the infinite symmetric groups. 85h:20002

Kopplberg, Sabine Groups of permutations with few fixed points. 85k:20009

Samardžiski, A. See Čupona, G.; et al., 85j:20003

#### secondary classifications (20B07)

Johnson, Kenneth Walter Loop transversals and the centralizer ring of a permutation group. 85i:20007

Szász, Carol Bemerkung über das Vorzeichen einer Permutation. (Romanian summary) [Comment on the sign of a permutation] (Not in MR)

#### 20B10 Characterization theorems

Podryabinikov, A. V. Transitive permutation groups with an irreducible component that is not one-dimensional. (Russian) 85e:20002

#### secondary classifications (20B10)

Leighton, Frank Thomson On the decomposition of vertex-transitive graphs into multicycles. 85h:05023b

Praeger, Cheryl E. Finite simple groups and finite primitive permutation groups. 85k:20006

#### 20B15 Uniprimitive groups

Bhattacharya, Prabir Primitive permutation groups of prime power degree. (See 85g:20023)

Cameron, Peter J. (with Praeger, Cheryl E.; Saxl, J.; Seitz, Gary M.) On the Sims conjecture and distance transitive graphs. 85g:20006

Ivanov, A. A. (with Klin, M. Kh.; Tsaranov, S. V.; Shpektorov, S. V.) On the question of calculation of the subdegrees of transitive permutation groups. (Russian) 85k:20010

Klin, M. Kh. See Ivanov, A. A.; et al., 85k:20010

Praeger, Cheryl E. See Cameron, Peter J.; et al., 85g:20006

Saxl, J. See Cameron, Peter J.; et al., 85g:20006

Seitz, Gary M. See Cameron, Peter J.; et al., 85g:20006

Shpektorov, S. V. See Ivanov, A. A.; et al., 85k:20010

Tsaranov, S. V. See Ivanov, A. A.; et al., 85k:20010

#### secondary classifications (20B15)

Liebeck, Martin W. Permutation modules for rank 3 unitary groups. 85f:20013

#### 20B20 Multiply transitive finite groups

Akiyama, Kenji 4-fold transitive permutation groups in which the stabilizer of four points in  $G$  has an orbit of length three. 85e:20004

Bhattacharya, Prabir On the modular representation of permutation groups of prime power degree. 85b:20003

Cohen, Arjeh M. (with Zanema, H.) A computation concerning doubly transitive permutation groups. 85k:20011

Medvedev, V. K. (with Ustimenko-Bakumovskii, V. A.) Transitive extensions of permutation groups. (Russian) 85k:20012

Ustimenko-Bakumovskii, V. A. See Medvedev, V. K., 85k:20012

Zanema, H. See Cohen, Arjeh M., 85k:20011

#### secondary classifications (20B20)

Bernasconi, Carlo Geometric designs. (Italian summary) 85i:05029

Grundhöfer, Theo Die Projektivitätsgruppen der endlichen Translationsebenen. [The projectivity groups of finite translation planes] 85i:51008

Leighton, Frank Thomson Circulants and the characterization of vertex-transitive graphs. 85h:05023a

Velikovich, L. L. A type of star-transitivity. (Russian) 85f:05098

Yap, Hian Poh On 4-ultratransitive graphs. 85i:05130

Zlotnik, B. M. Doubly transitive groups of type  $p^m(p^n - 1)$  and maximal nonbinary codes generated by them. 85h:94032

#### 20B22 Multiply transitive infinite groups

Barlotti, Adriano (with Strambach, Karl)  $k$ -transitive permutation groups and  $k$ -planes. 85e:20005

Fomin, A. N. See Nefed'eva, N. D., 85h:20006

Nefed'eva, N. D. (with Fomin, A. N.) Transitive groups of permutations in which some almost  $p$ -central element stabilizes exactly one symbol. (Russian) 85h:20006

Strambach, Karl See Barlotti, Adriano, 85e:20005

#### secondary classifications (20B22)

André, Johannes Über Kennzeichnungen zweifach transitiver Permutationsgruppen. [On characterizations of doubly transitive permutation groups] 85k:20008

Faina, Giorgio A new class of 2-transitive involutory permutation sets. 85i:51026

Medvedev, V. K. (with Ustimenko-Bakumovskii, V. A.) Transitive extensions of permutation groups. (Russian) 85k:20012

Ustimenko-Bakumovskii, V. A. See Medvedev, V. K., 85k:20012

#### 20B25 Finite automorphism groups of algebraic, geometric, or combinatorial structures [See also 05Bxx, 12F10, 20G40, 20H30, 51-XX.]

Büttner, Wolfram On 4-dimensional translation planes admitting a Suzuki group as group of automorphisms. 85f:20007

Camina, Alan R. (with Gagen, Terence M.) Block transitive automorphism groups of designs. 85h:20007

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Godall, C. D. The automorphism groups of some cubic Cayley graphs. 85a:20003

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- Bujalance, E. Cyclic groups of automorphisms of compact nonorientable Klein surfaces without boundary. **85f:30081**
- Cameron, Peter J. (with Praeger, Cheryl E.) On 2-arc transitive graphs of girth 4. **85m:05039**
- Chetiya, Buddha Prasad (with Kalita, Sarat Chandra) Some automorphism groups of compact Riemann surfaces of small genus. **85g:30076**
- Christopher, Peter R. Repeated graphs with direct product automorphism groups. **85b:05094**
- Conway, John H. The automorphism group of the 26-dimensional even unimodular Lorentzian lattice. **85k:11030**
- Fomin, A. N. Elementary primary block designs admitting a transitive group of automorphisms. (Russian) **85m:05013**
- Foulser, D. A. (with Johnson, Norman Lloyd; Ostrom, T. G.) A characterization of the Desarguesian planes of order  $q^2$  by  $SL(2, q)$ . **85g:51006**
- Gela, Jaroslaw On the automorphism groups of mapping graphs. **85h:05051**
- Geyer, Wulf-Dieter Jede endliche Gruppe ist Automorphismengruppe einer endlichen Erweiterung  $K|Q$ . [Every finite group is the automorphism group of a finite extension  $K|Q$ ] **85e:12003**
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- Klemm, Michael Kennzeichnung der erweiterten Quadratische-Codes durch ihre  $PSL(2, q)$ -Zulässigkeit. [Characterization of extended quadratic codes by their  $PSL(2, q)$ -admissibility] **85c:94028**
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- 20B27 Infinite automorphism groups** [See also 12F10.]
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- Gela, Jaroslaw On the automorphism groups of mapping graphs. **85h:05051**
- Hajja, Mowaffaq A note on monomial automorphisms. **85k:12001**
- Jones, Gareth A. Just-edge-transitive maps and Coxeter groups. **85k:05041**
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- Koppelberg, Sabine Groups of permutations with few fixed points. **85k:20009**
- Mäurer, Helmut Die Automorphismengruppe des Durchschnittsgraphen der  $k$ -Teilmenge einer Menge. [The automorphism group of the intersection graph of the  $k$ -subsets of a set] **85m:05040**
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- Seifter, Norbert Automorphisms of infinite graphs. **85i:05128**
- Vinberg, E. B. The two most algebraic  $K3$  surfaces. **85k:14020**
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- Zervos, S. P. Cardinals as orbits of groups of automorphisms of ordered sets. (Russian) **85i:04002**
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- Mäurer, Helmut Zur Automorphismengruppe der symmetrischen Gruppen. [On the automorphism group of the symmetric groups] **85k:20014**
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- Sun, Zong Ming The set of orders of elements in the symmetric group  $S_n$  of degree  $n$ . (Chinese) **85e:20007**
- Zhuang, Qin Regular generating units of large symmetric groups. (Chinese) (Not in MR)
- secondary classifications (**20B30**)
- Corder, Marston D. E. Some results on quotients of triangle groups. **85j:20029**
- Droste, Manfred Products of conjugacy classes of the infinite symmetric groups. **85b:20002**
- Lascoux, Alain (with Schützenberger, Marcel-Paul) Symmetry and flag manifolds. **85c:14073**
- Pavlov, A. I. The number and cyclic structure of permutations of certain classes. (Russian) **85m:11055**
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- 20B35 Subgroups of symmetric groups**
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- Borevich, Z. I. (with Gavron, P. V.) Arrangement of Young subgroups in a symmetric group. (Russian) **85f:20009**
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- Bailey, R. A. (with Praeger, Cheryl E.; Rowley, C. A.; Speed, T. P.) Generalized wreath products of permutation groups. 85b:20005  
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## 20Cxx Representation theory of groups

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- Bhandari, Ashwani K. (with Luthar, Indar S.) Certain conjugacy classes of units in integral group rings of metacyclic groups. 85k:20018  
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- Bhattacharya, Prabir. On the modular representation of permutation groups of prime power degree. 85b:20003  
 Karpilovsky, Gregory. Commutative group algebras. 85a:16014

Kühhammer, Burkhard. On blocks with central defect groups. 85c:16018

Landrock, P. Finite group algebras and their modules. 85b:20002

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Plesken, Wilhelm. Group rings of finite groups over  $p$ -adic integers. 85c:16019

Poll, A. Idéaux principaux nilpotents de dimension maximale dans l'algèbre  $F_q[G]$  d'un groupe abélien fini  $G$ . (English summary) [Nilpotent principal ideals of maximal dimension in the algebra  $F_q[G]$  of a finite abelian group  $G$ ] 85c:16020

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Seiguchi, Katsunaka. On the automorphism group of the  $p$ -adic group ring of a metacyclic  $p$ -group. 85c:16021

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On the structure of certain injective modules over group algebras of soluble groups of finite rank. 85g:20013

Rühl, Frank. On group ring quotients of divisible groups. 85b:20009

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Wehrfrits, B. A. F. Group rings with finite central endomorphism dimension. 85c:20007

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Brookes, C. J. B. More soluble groups with primitive group rings. 85g:16008

Farkas, Daniel R. Ordinally complete group rings. 85i:16013

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(with Snider, Robert L.) Arithmeticity of stabilizers of ideals in group rings. 85c:20030

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Gupta, Ram Niwas. Semisimplicity of group rings—an exposition. (See 85g:00023)

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Krempa, Jan. Homomorphisms of group rings. 85e:16017

Maller, Michael (with Whitehead, Jennifer) Virtual permutations of  $Z[\mathbb{Z}^n]$  complexes. 85f:58059

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- Roggenkamp, Klaus W. (with Scott, Leonard L.) Units in metabelian group rings: nonsplitting examples for normalized units. **85g:20010a**  
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- Gow, R. Representations over  $p$ -adic fields of the finite general linear and unitary groups. **85k:20129**  
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- A unified theory of the point groups. III. Classification and basis functions of improper point groups. 85b:20017b
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- Hurley, A. C. Simply subcubic groups and ray groups. Explicit matrix representations and the group algebra. 85k:20032

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- Lulek, B. (with Lulek, T.) Irreducible bases of induced representations of finite groups. 85m:20018
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- Kazarin, L. S. Automorphisms, factorizations and theorems of Sylow type. (Russian) **85c:20023**
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- Richards, I. M. A remark on the number of cyclic subgroups of a finite group. **85k:20081**
- Spivakovskii, A. V. Structure of finite groups having  $C$ -separating subgroups. (Russian) **85j:20022**
- Stöhr, Elena ★ Die Untergruppen der freien metabelischen Gruppen. (German) [The subgroups of free metabelian groups] **85a:20012**
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- Gersten, S. M. Intersections of finitely generated subgroups of free groups and resolutions of graphs. **85m:05037b**
- Ivanov, P. A. (with Vysotina, L. A.) The Frattini subgroup of the universal group of formally analytic transformations over the ring of integers. (Russian) **85j:20038**
- Leinen, Felix Lokal endlich- $\pi$ -separierte Gruppen mit Minimalbedingung für Zentralisatoren. [Locally finitely- $\pi$ -separated groups with the minimal condition on centralizers] **85b:20040**
- Malanina, G. A. Groups all of whose proper nonabelian subgroups are completely factorable. (Russian) **85m:20046**
- Stallings, John R. Topology of finite graphs. **85m:05037a**
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- Kur'min, Yu. V. Calculation of the ideal generated by Fox derivatives. (Russian) **85f:20033**
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- Brandl, Rolf On finite abelian-by-nilpotent groups. **85k:20050**
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- Gurchenkov, S. A. Minimal varieties of  $l$ -groups. (Russian) **85a:06027**
- Varieties of nilpotent lattice-ordered groups. (Russian) **85d:06016**
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- Stöhr, Elena ★ Die Untergruppen der freien metabelischen Gruppen. (German) [The subgroups of free metabelian groups] **85a:20012**
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- Leone, Antonella (with Maj, Mercedes) Nonsubmodular finite groups with submodular proper quotients. (Italian. English summary) **85k:20085**
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- Richter, Gerd Application of some lattice theoretic results in group theory. **85j:20024**
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- Kropholler, P. H. On finitely generated soluble groups with no large wreath product sections. **85j:20033**
- O'hanan, A. Yu. Groups of bounded period with subgroups of prime order. (Russian) **85g:20052**
- Protasov, I. V. (with Taybenko, Yu. V.) Chabauty's topology in the lattice of closed subgroups. (Russian) **85f:22004**
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- Albert, R. Automorphismen nilpotenter proendlicher Gruppen. (English summary) [Automorphisms of nilpotent profinite groups] **85d:20024**
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- Herfort, W. (with Ribenboim, Paulo) Localization of profinite groups. **85k:20088**
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- Labute, J. See Dummit, D., **85k:20087**
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- Smith, John Howard The structure of free prosupersolvable groups. **85h:20034**
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## secondary classifications (20E18)

- Dieker, Volker Demutkin-Erzeugende und Einbettungsprobleme für elementarabelsche 2-Erweiterungen zwei-adischer Zahlkörper. [Demushkin generators and imbedding problems for elementary-abelian 2-extensions of two-adic number fields] **85b:11106**
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## 20E22 Extensions, wreath products, and other compositions

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- Brodskii, S. Anomalous products of locally indicable groups. (Russian) **85g:20037**
- Dixon, Martyn (with Fournelle, Thomas A.) Some properties of generalized wreath products. **85k:20089**
- Fournelle, Thomas A. See Dixon, Martyn, **85k:20089**
- Fry, Michael D. Automorphisms and stem extensions. **85g:20038**
- Hickin, Kenneth K. (with Phillips, Richard E.) Isomorphism types in wreath products and effective embeddings of periodic groups. **85i:20034**
- Kaluzhnin, L. A. (with Sushchanskii, V. I.) Nonstandard wreath products of groups. (Ukrainian. Russian summary) **85k:20090**
- Mamuchishvili, A. I. Approximability of a solvable product and wreath product of groups. (Russian. English and Georgian summaries) **85k:20091**
- Meyer, Josef Minimal extensions of finite groups by free abelian groups. **85k:20092**
- Phillips, Richard E. See Hickin, Kenneth K., **85i:20034**
- Robinson, Derek J. S. Automorphisms of group extensions. (See **85g:00023**)
- Seifert, Benedict Fibred group extensions and the normalizer of a transformation group. **85k:20093**
- Sushchanskii, V. I. See Kaluzhnin, L. A., **85k:20090**
- Vasyakina, M. N. Verbal structure of wreath products of elementary abelian groups. (Russian. English summary) **85m:20042**
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## secondary classifications (20E22)

- Artamonov, V. A. Projectively free nilpotent groups. (Russian) **85c:20015**
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- Ch'en, Yung Ch'iu On extension categories and Schur multipliers of profinite groups. **85d:20023a**
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- Ferguson, Pamela A. Relative normal complements and extendibility of characters. **85m:20030**
- Gérard, Yves Caractérisation des groupes de cohomologie d'un groupe topologique en termes de suites exactes. [Characterization of cohomology groups of a topological group in terms of exact sequences] **85g:22007**
- Kur'min, Yu. V. The group of extensions and the functor Ext in the variety  $\mathfrak{N}_c$ . (Russian) **85k:20153**
- Madaan, V. D. (with Nath, Prem) On extensions of subgroup homomorphisms to homomorphisms of groups. **85e:39006**
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- Perraud, J. On small cancellation theory over HNN extensions. (French. English summary) **85e:20027**
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## 20E25 Local properties

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- Amberg, Bernhard Über den Satz von Kegel und Wielandt. [On the theorem of Kegel and Wielandt] **85g:20039**
- Belyaev, V. V. Locally finite groups all of whose proper subgroups are almost abelian. (Russian) **85c:20025**
- Bruno, Brunella (with Phillips, Richard E.) On minimal conditions related to Miller-Moreno type groups. **85d:20026**
- Chernikov, N. S. Infinite groups decomposable into a product of pairwise permutable subgroups. (Russian. English summary) **85m:20043**
- Hartley, Brian (with Shute, G.) Monomorphisms and direct limits of finite groups of Lie type. **85k:20094**
- Leinen, Felix Lokal endlich- $\pi$ -separierte Gruppen mit Minimalbedingung für Zentralisatoren. [Locally finitely- $\pi$ -separated groups with the minimal condition on centralizers] **85b:20040**
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- Meĭnikov, Yu. B. (with Starostin, A. I.) Locally finite groups with complemented biprimary cyclic subgroups. (Russian) **85f:20026**
- Mishchenko, B. I. Locally finite groups with complemented infinite nonprimary subgroups. (Russian) **85b:20041**
- Otal, J. Some local theorems for groups. (Spanish. English summary) **85j:20026**
- Phillips, Richard E. See Bruno, Brunella, **85d:20026**
- Shlĭshin, A. K. Conjugately biprimitively finite groups with the primary minimality condition. (Russian) **85k:20096**
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## secondary classifications (20E25)

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- Broksht, S. Anomalous products of locally indicable groups. (Russian) **85g:20037**
- García Esmola, Marta Injectors in locally finite groups. (Spanish. English summary) **85j:20035**
- Hartley, Brian Locally finite groups whose irreducible modules are finite dimensional. **85c:20006**

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- Kilch, Dieter Conjugacy separability and separable orbits. **85j:20027**
- Tamburini, Chiara (with Wilson, John S.) A residual property of certain free products. **85m:20044**
- Wilson, John S. See Tamburini, Chiara, **85m:20044**

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- de Giovanni, Francesco (with Franciosi, Silvana) A lattice characterization of residually supersolvable groups. (Italian. English summary) **85h:20030**
- Hartley, Brian A note on free presentations and residual nilpotence. **85m:20034**

## 20E28 Maximal subgroups, minimal subgroups

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- Mikaelian, G. S. Conjugacy of maximal  $X$ -subgroups with respect to some automorphism. (Russian. Armenian summary) **85i:20025**
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## 20E32 Simple groups [See also 20D05.]

## secondary classifications (20E32)

- Hartley, Brian (with Shute, G.) Monomorphisms and direct limits of finite groups of Lie type. **85k:20094**
- Phillips, Richard E. Existentially closed locally finite central extensions: multipliers and local systems. **85m:20060**
- Shute, G. See Hartley, Brian, **85k:20094**

## 20E34 General structure theorems

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- Puusepp, P. Determination of a primary Miller-Moreno group by its semigroup of endomorphisms. (Russian. English and Estonian summaries) **85k:20097**
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- Senashov, V. I. Groups with points. (Russian) (See **85d:00026**)
- Smarda, B. (with Niemennmaa, Markku) Normal subgroups as ideals. **85b:20042**
- Wen, Zhi Xiong On the order of metacyclic groups. (Chinese. English summary) **85i:20036**

## secondary classifications (20E34)

- Bénateau, Lucien 3-abelian groups and commutative Moufang loops. **85m:20099**
- Seifert, Benedict Transitivity properties, Bruhat decomposition and Tits systems for transformation groups. **85i:20009**
- Walle, Gary L. Groups with maximal subgroups of Sylow subgroups normal. **85a:20009**

## 20E36 General theorems concerning automorphisms of groups

- Bernal, Eulalio On locally inner endomorphisms. (See **85i:00012**)
- Collins, Donald J. (with Levin, Frank) Automorphisms and Hopficity of certain Baumslag-Solitar groups. **85b:20043**
- Hilton, Peter On special group-automorphisms and their composition. **85k:20098**
- Levin, Frank See Collins, Donald J., **85b:20043**
- Robinson, Derek J. S. A clarification: "Groups with prescribed automorphism group" [Proc. Edinburgh Math. Soc. (2) **25** (1982), no. 3, 217-227; MR **84b:20033**]. **85i:20037**

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- Albert, R. Automorphismen nilpotenter proendlicher Gruppen. (English summary) [Automorphisms of nilpotent profinite groups] **85d:20024**
- Belyaev, V. V. (with Seseikin, N. F.) Periodic groups with an almost regular involutive automorphism. (Russian) **85m:20058**
- Blochchitsyn, V. Ya. Automorphisms of the symplectic group  $Sp_4$  over a local ring. (Russian) **85a:20017**
- Dowds, Richard E. (with Polimeni, Albert D.) On the existence of group automorphisms whose inverse is their reciprocal. **85g:20031**
- Fournelle, Thomas A. Torsion of semicomplete nilpotent groups. **85c:20028**
- Fry, Michael D. Automorphisms and stem extensions. **85g:20038**
- Polimeni, Albert D. See Dowds, Richard E., **85g:20031**
- Robinson, Derek J. S. (with Stonehewer, S. E.; Wiegold, James) Automorphism groups of FC-groups. **85b:20053**
- Automorphisms of group extensions. (See **85g:00023**)
- Seseikin, N. F. See Belyaev, V. V., **85m:20058**
- Stonehewer, S. E. See Robinson, Derek J. S.; et al., **85b:20053**
- Wan, Zhe Xian (with Yang, Jin Gen) Automorphisms of the two-dimensional projective linear group over the ring of integral quaternions. (Chinese) (Not in MR)
- Wiegold, James See Robinson, Derek J. S.; et al., **85b:20053**
- Yang, Jin Gen See Wan, Zhe Xian, (Not in MR)
- Zimmerman, Jay Countable torsion FC-groups as automorphism groups. **85i:20042**

## 20Fxx Special aspects of infinite or finite groups

## 20F05 Generators, relations, and presentations

- Allenby, R. E. J. T. (with Tang, C. Y.) Conjugacy separability of certain classes of groups. **85g:20041**
- Arrhenius-Wold, Anna-Lisa ★ Some finite groups with two generators satisfying the relations  $ba = a^{-1}b^{\lambda}$ ,  $a^{\alpha} = 1$ ,  $b^{\beta} = 1$ , where  $\kappa \equiv \lambda$  modulo the greatest common divisor of  $\alpha$  and  $\beta$ . **85a:20013**
- Benson, Max Loell Growth series of finite extensions of  $\mathbb{Z}^n$  are rational. **85e:20026**
- Biljana, Janeva Some properties of presentations of groups with one defining relator. (Macedonian summary) **85k:20099**
- Brown, Kenneth S. Presentations for groups acting on simply-connected complexes. **85k:20100**
- Conder, Marston D. E. Some results on quotients of triangle groups. **85j:20029**
- Conway, John H. An algorithm for double coset enumeration? **85j:20030**
- Crowell, R. H. The derived group of a permutation representation. **85m:20047**
- Doković, Dragomir Ž. A correction, a retraction, and addenda to my paper: "Another example of a finitely presented infinite simple group" [J. Algebra **69** (1981), no. 2, 261-269; MR **82m:20035**]. **85d:20027**
- van den Dries, L. (with Wilkie, A. J.) Gromov's theorem on groups of polynomial growth and elementary logic. **85k:20101**
- See also Wilkie, A. J., **85k:20107**
- Edjvet, M. Groups with balanced presentations. **85m:20048**
- Grigorchuk, R. I. On the Milnor problem of group growth. (Russian) **85g:20042**
- Gupta, N. D. (with Sidki, Said) Some infinite  $p$ -groups. (Russian summary) **85k:20102**
- Howie, James (with Pride, Stephen J.) A spelling theorem for staggered generalized 2-complexes, with applications. **85k:20103**
- Kenne, P. E. Presentations for some direct products of groups. **85a:20014**
- Kiseleva, L. G. The number of nontrivial solutions of homogeneous equations in words with three unknowns. (Russian) **85i:20038**
- Kreit, Sava Two results on associativity of composite operations in groups. **85m:20049**
- McDermott, John Groups and trees. **85g:20043**
- McIsaac, A. J. Some conditions for finite presentation of nilpotent-by-abelian groups. **85k:20104**
- Noskov, G. A. The number of generators of a group. (Russian) **85b:20044**
- Pride, Stephen J. See Howie, James, **85k:20103**
- Robertson, E. F. (with Williams, P. D.) A presentation of  $PGL(2, p)$  with three defining relations. **85k:20105**
- Sidki, Said See Gupta, N. D., **85k:20102**
- Tang, C. Y. See Allenby, R. E. J. T., **85g:20041**
- Trofimov, V. I. Two remarks on the growth of groups. (Russian) **85m:20050**
- Tucker, Thomas W. On Proulx's four exceptional toroidal groups. **85k:20106**
- Vol'vachev, R. T. Linear representation of certain groups with one defining relation. (Russian. English summary) **85m:20051**
- Wilkie, A. J. (with van den Dries, L.) An effective bound for groups of linear growth. **85k:20107**
- See also van den Dries, L., **85k:20101**
- Williams, P. D. See Robertson, E. F., **85k:20105**

## secondary classifications (20F05)

- Anshel, Michael (with McAloon, Kenneth) Reducibilities among decision problems for HNN groups, vector addition systems and subsystems of Peano arithmetic. **85d:03096**
- Burns, R. G. (with Solitar, Donald) The indices of torsion-free subgroups of Fuchsian groups. **85e:20035**
- Campbell, Collin M. (with Robertson, E. F.) Presentations for the simple groups  $G$ ,  $10^5 < |G| < 10^6$ . **85m:20020**
- Cannon, John J. An introduction to the group theory language, Cayley. (See **85g:20001**)
- Chandler, Bruce (with Magnus, Wilhelm) ★ The history of combinatorial group theory. **85c:01001**
- Egorov, V. The residual finiteness of certain one-relator groups. (Russian) **85i:20035**
- Iskovskikh, V. A. Generators and relations in a two-dimensional Cremona group. (Russian) **85e:14019**
- Kanevsky, D. On cubic planes and groups connected with cubic varieties. **85e:14014**
- Kryashovskikh, G. V. Generating and defining relations of subalgebras of Lie algebras. (Russian) **85i:17005**
- Lubotsky, Alexander Group presentation,  $p$ -adic analytic groups and lattices in  $SL_2(\mathbb{C})$ . **85i:22017**
- Magnus, Wilhelm See Chandler, Bruce, **85c:01001**
- McAloon, Kenneth See Anshel, Michael, **85d:03096**
- Rasetti, Mario Exact partition function for a class of statistical mechanical problems on lattices homogeneous under finitely presented groups. **85j:82011**
- Robertson, E. F. See Campbell, Collin M., **85m:20020**
- Solitar, Donald See Burns, R. G., **85e:20035**
- Strebel, R. Explicit resolutions for the binary polyhedral groups and for other central extensions of the triangle groups. **85d:20046**
- Subgroups of finitely presented centre-by-metabelian groups. **85f:20027**
- Struk, Ruth Rebekka Some nonabelian 2-groups with abelian automorphism groups. **85f:20029**
- Thomas, Richard M. On the number of generators for certain finite groups. II. **85b:20035**
- Trofimov, V. I. Connection of imprimitivity blocks and the Rosset theorem. (Russian) **85f:05072**
- Tsvetkov, V. M. The complement of relations in pro- $p$ -groups of cohomological dimension two. (Russian) **85e:20025**
- Wajnryb, Bronisław A simple presentation for the mapping class group of an orientable surface. **85g:57007**
- Weiss, Asia Ivif An infinite graph of girth 12. **85j:52023**

## 20F06 Cancellation theory

- Hill, Pat (with Pride, Stephen J.; Vella, Alfred D.) Subgroups of small cancellation groups. **85m:20052**
- Hoare, A. H. M. On groups with real valued length function. **85k:20108**
- Perraud, J. On small cancellation theory over HNN extensions. (French. English summary) **85e:20027**
- Pride, Stephen J. Small cancellation conditions satisfied by one-relator groups. **85e:20028**
- See also Hill, Pat; et al., **85m:20052**
- Vella, Alfred D. See Hill, Pat; et al., **85m:20052**

## secondary classifications (20F06)

- Biljana, Janeva Some properties of presentations of groups with one defining relator. (Macedonian summary) **85k:20099**
- Howie, James (with Pride, Stephen J.) A spelling theorem for staggered generalized 2-complexes, with applications. **85k:20103**
- Pride, Stephen J. See Howie, James, **85k:20103**

## 20F10 Word problems, other decision problems, connections with logic and automata [See also 03D05, 03D40, 06B25, 08A50, 68Qxx.]

- Adyan, S. I. (with Makanin, G. S.) Studies in algorithmic questions of algebra. (Russian) **85k:20109**
- Baumslag, Gilbert (with Dyer, E.; Miller, C. F., III) On the integral homology of finitely presented groups. **85g:20044**
- Cannonito, Frank B. (with Robinson, Derek J. S.) The word problem for finitely generated soluble groups of finite rank. **85i:20039**
- Dyer, E. See Baumslag, Gilbert; et al., **85g:20044**
- Haring-Smith, Robert H. Groups and simple languages. **85b:20045**
- Horadam, K. J. The conjugacy problem for graph products with central cyclic edge groups. **85j:20031**
- Howie, James Spherical diagrams and equations over groups. **85i:20040**
- Kharlampovich, O. G. The universal theory of the class of finite nilpotent groups is undecidable. (Russian) **85b:20046**
- Makanin, G. S. See Adyan, S. I., **85k:20109**
- Miller, C. F., III See Baumslag, Gilbert; et al., **85g:20044**
- Newman, M. F. Groups of exponent six. **85m:20053**
- Repin, N. N. Equations with one unknown in nilpotent groups. (Russian) **85g:20045**
- Robinson, Derek J. S. See Cannonito, Frank B., **85i:20039**
- Shatrova, N. A. Degree of complexity of an algorithm for a class of groups. (Russian) **85h:20036**
- Tetruashvili, M. R. On the conjugacy problem for finitely presented subgroups of finite index of a finitely presented group with unsolvable conjugacy problem. (Russian. English and Georgian summaries) **85k:20110**

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- Anshel, Michael (with McAloon, Kenneth) Reducibilities among decision problems for HNN groups, vector addition systems and subsystems of Peano arithmetic. **85d:03096**
- Bokut', L. A. New examples of groups with a standard basis. (Russian) **85m:20035**

- Collins, Donald J. (with Zieschang, Heiner) Rescuing the Whitehead method for free products. I. Peak reduction. **85i:20031a**
- (with Zieschang, Heiner) Rescuing the Whitehead method for free products. II. The algorithm. **85i:20031b**
- Glass, A. M. W. (with Gurevich, Yuri) The word problem for lattice-ordered groups. **85d:06015**
- Godlevskii, A. B. See Letichevskii, A. A.; et al., **85d:20001**
- Gurevich, Yuri See Glass, A. M. W., **85d:06015**
- Hickin, Kenneth K. (with Phillips, Richard E.) Isomorphism types in wreath products and effective embeddings of periodic groups. **85i:20034**
- Howie, James (with Pride, Stephen J.) A spelling theorem for staggered generalized 2-complexes, with applications. **85k:20103**
- Kogalovskii, S. (with Soldatova, V.) Remarks on countably local classes. (Russian) **85g:20036**
- Krivoi, S. L. An algorithm to construct a basis of the intersection of finitely generated free groups. **85d:20002**
- See also Letichevskii, A. A.; et al., **85d:20001**
- Letichevskii, A. A. (with Godlevskii, A. B.; Krivoi, S. L.) An efficient algorithm for constructing a basis of a subgroup of a free group. **85d:20001**
- Luo, Li Bo The  $\tau$ -theory for free groups is undecidable. **85j:03073**
- McAloon, Kenneth See Anshel, Michael, **85d:03096**
- Miech, R. J. An isomorphism problem. **85b:20026**
- A commutator basis. **85b:20027**
- Myasnikov, A. G. (with Remeslennikov, V. N.) Classification of power nilpotent groups by elementary properties. (Russian) **85h:20042**
- Phillips, Richard E. See Hickin, Kenneth K., **85i:20034**
- Pride, Stephen J. Small cancellation conditions satisfied by one-relator groups. **85e:20028**
- See also Howie, James, **85k:20103**
- Remeslennikov, V. N. (with Roman'kov, V. A.) Model-theoretic and algorithmic questions of group theory. (Russian) **85f:20002**
- See also Myasnikov, A. G., **85h:20042**
- Roman'kov, V. A. See Remeslennikov, V. N., **85f:20002**
- Shevchenko, V. N. The exchange problem, the Frobenius problem and the group minimization problem. (Russian) **85j:11030**
- Soldatova, V. See Kogalovskii, S., **85g:20036**
- Zieschang, Heiner See Collins, Donald J., **85i:20031a** and **85i:20031b**

## 20F12 Commutator calculus

- Howie, James The solution of length three equations over groups. **85b:20047**
- Nikolova, D. B. Groups with a two-variable commutator identity. **85b:20037b**
- A class of identities in groups. (Russian) **85h:20037a**
- Commutator identities in alternating groups. (See **85g:20001**)
- Computer calculation of a commutator identity in alternating groups. (Russian) **85m:20054**
- Yunus, I. A. Fox subgroups of free groups. (Russian) **85k:20111**

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- Skopin, A. I. Factors of the nilpotent series of some metabelian groups of prime-power exponent. (Russian) **85j:20032**
- Xu, Ming Yao A theorem on metabelian  $p$ -groups and some consequences. **85k:20059**

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- Bowers, J. F. Classes of groups which resemble varieties. **85h:20038**
- Gupta, N. D. (with Hales, A. W.; Passi, I. B. S.) Dimension subgroups of metabelian groups. **85g:20046**
- Hales, A. W. See Gupta, N. D.; et al., **85g:20046**
- Passi, I. B. S. See Gupta, N. D.; et al., **85g:20046**
- Skopin, A. I. Factors of the nilpotent series of some metabelian groups of prime-power exponent. (Russian) **85j:20032**
- Wehrfrits, B. A. F. The upper central factors of certain skew-linear groups. **85c:20027**

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- Exarchakos, Theodore A generalization of a theorem of A. D. Otto. **85b:20025**
- Kolmakov, Yu. A. Varieties all of whose groups have a property close to solvability. (Russian) **85m:20037**
- Sakuma, Makoto See Traldi, Lorenzo, **85i:57004**
- Traldi, Lorenzo (with Sakuma, Makoto) Linking numbers and the groups of links. **85i:57004**

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- Anashin, V. S. Solvable groups with operators and commutative rings having transitive polynomials. (Russian) **85d:20028**
- Burns, R. G. (with Okoh, Frank; Smith, Howard; Wiegold, James) On the number of normal subgroups of an uncountable soluble group. **85k:20112**
- Kropholler, P. H. On finitely generated soluble groups with no large wreath product sections. **85j:20033**
- Kuzeniy, N. F. (with Semko, N. N.) The structure of solvable nonnilpotent meta-Hamiltonian groups. (Russian) **85k:20113**
- Noekov, G. A. The elementary theory of a finitely generated almost solvable group. (Russian) **85d:20029**
- Okoh, Frank See Burns, R. G.; et al., **85k:20112**
- Rhemtulla, A. H. (with Weiss, Alfred R.; Yousif, M.) Solvable groups with  $\pi$ -isolators. **85k:20114**
- (with Wehrfrits, B. A. F.) Isolators in soluble groups of finite rank. **85h:20039**
- Robinson, Derek J. S. (with Wilson, John S.) Soluble groups with many polycyclic quotients. **85k:20115**



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- Amberg, Bernhard Factorized groups with max, min and min-p. 85m:20041  
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## 20F17 Formations of groups [See also 20D10.]

- González Jiménez, Santos Conjugation families and  $H$ -complementation. (Spanish. English summary) (See 85g:20028)  
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- Beletskii, P. M. Dense subclasses in certain varieties of two-nilpotent groups. (Russian) 85f:20024  
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## 20F24 FC-groups and their generalizations

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## 20F26 Special subgroups

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## secondary classifications (20F26)

- van den Dries, L. (with Wilkie, A. J.) Gromov's theorem on groups of polynomial growth and elementary logic. 85k:20101  
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## 20F28 Automorphism groups of groups [See also 20E36.]

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 Farkas, Daniel R. (with Snider, Robert L.) Arithmeticity of stabilizers of ideals in group rings. 85c:20030  
 Gersten, S. M. Geometric automorphisms of a free group of rank at least three are rare. 85b:20054  
 Malone, J. J.  $p$ -groups with nonabelian automorphism groups and all automorphisms central. 85k:20122  
 Struk, Robert L. See Farkas, Daniel R., 85c:20030  
 Struk, Ruth Rebekka Some nonabelian 2-groups with abelian automorphism groups. 85f:20029  
 Zimmerman, Jay Countable torsion FC-groups as automorphism groups. 85i:20042

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- Boyd, J. N. (with Raychowdhury, P. N.) A note on the completeness of the symmetry groups of regular polygons. 85a:51018  
 Clay, J. R. (with Maxson, C. J.; Meldrum, J. D. P.) The group of units of centralizer near-rings. 85j:16055

Iranzo Asnar, M.<sup>a</sup>. Jesús (with Pérez Monasor, Francisco) Constraint of the automorphism group of a finite group. (Spanish. English summary) **85j:20020**

Levchuk, V. M. Connections between the unitriangular group and certain rings. II. Groups of automorphisms. (Russian) **85d:20039**

MacHale, D. Some finite groups which are rarely automorphism groups. II. **85g:20032**  
 Martín Salvador, M. Pilar Generalizations for automorphisms of nilpotent groups. (Catalan. English summary) **85i:20041**

Mikser, Helmut Zur Automorphismengruppe der symmetrischen Gruppen. [On the automorphism group of the symmetric groups] **85k:20014**

Maxson, C. J. (with Meldrum, J. D. P.) Centralizer representations of near-fields. **85j:16058**

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Menegazzo, Federico A problem concerning the automorphism group of a finite  $p$ -group. (Italian) **85e:20022**

Pérez Monasor, Francisco See Iranzo Asnar, M.<sup>a</sup>. Jesús, **85j:20020**

Raychowdhury, P. N. See Boyd, J. N., **85a:51018**

Robinson, Derek J. S. (with Stonehewer, S. E.; Wiegold, James) Automorphism groups of FC-groups. **85b:20053**

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Stonehewer, S. E. See Robinson, Derek J. S.; et al. **85b:20053**

Turull, Alexandre Supersolvable automorphism groups of solvable groups. **85d:20030**

Wehrfrits, B. A. F. Endomorphisms of polycyclic groups. **85b:20048**

Wiegold, James See Robinson, Derek J. S.; et al. **85b:20053**

## 20F29 Representations of groups as automorphism groups of algebraic systems

Schwarz, Gerald W. Invariant theory of  $G_2$ . **85c:20031**

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Cohen, Arjeh M. (with Wales, David B.) Finite subgroups of  $G_2(C)$ . **85b:20010**

Wales, David B. See Cohen, Arjeh M., **85b:20010**

## 20F32 Geometric group theory [See also 05C25, 20Exx, 20Gxx.]

Chapman, G. R. (with Wilkens, D. L.) On length functions, trivializable subgroups and centres of groups. **85k:20123**

Coxeter, H. S. M. The group of genus two. **85k:20124**

Timmesfeld, F. G. Tits geometries and parabolic systems in finitely generated groups. I. **85g:20050a**

Tits geometries and parabolic systems in finitely generated groups. II. **85g:20050b**

Tucker, Thomas W. Finite groups acting on surfaces and the genus of a group. **85b:20055**

Wilkens, D. L. See Chapman, G. R., **85k:20123**

secondary classifications (20F32)

Bianchi, Giuliana (with Cori, Robert) Colorings of hypermaps and a conjecture of Brenner and Lyndon. **85g:20056**

Brenner, J. L. (with Lyndon, R. C.) Permutations and cubic graphs. **85g:2005a**

Comer, Stephen D. A remark on chromatic polynomials. **85d:20085**

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van de Craats, J. On Simonis'  $10_3$  configuration. **85b:51004**

Dye, R. H. A maximal subgroup of  $\text{PSp}_6(2^m)$  related to a spread. **85d:51010**

Godsil, C. D. The automorphism groups of some cubic Cayley graphs. **85a:20003**

(with Kocay, W. L.) Graphs with three mutually pseudosimilar vertices. **85i:05125**

Jones, Gareth A. (with Thornton, J. S.) Operations on maps, and outer automorphisms. **85m:05036**

Kanevsky, D. On cubic planes and groups connected with cubic varieties. **85e:14014**

Knüppel, Frieder Äquivalente Ebenen über kommutativen Ringen und singuläre Prä-Hjelmslevgruppen. [Conformal planes over commutative rings and singular pre-Hjelmslev groups] **85f:51008**

Kocay, W. L. See Godsil, C. D., **85i:05125**

Lyndon, R. C. See Brenner, J. L., **85g:2005a**

Perraud, J. On small cancellation theory over HNN extensions. (French. English summary) **85e:20027**

Ribenboim, Paulo Algebraic structures on graphs. **85b:18005**

Servatius, Brigitte A short proof of a theorem of Burns. **85c:20019**

Thornton, J. S. See Jones, Gareth A., **85m:05036**

Trofimov, V. I. Connection of imprimitivity blocks and the Rosset theorem. (Russian) **85f:05072**

Tucker, Thomas W. A refined Hurwitz theorem for imbeddings of irredundant Cayley graphs. **85i:05099**

There is one group of genus two. **85m:05042**

Vince, Andrew Regular combinatorial maps. **85i:05129**

Weiss, Richard Mark On Fischer's characterization of  $\text{Sp}_{2n}(2)$  and  $U_n(2)$ . **85j:20009**

## 20F34 Fundamental groups and their automorphisms [See also 57M05, 57Sxx.]

Gersten, S. M. On Whitehead's algorithm. **85g:20051**

Picard, Sophie ★ Quelques développements récents de la théorie des groupes fondamentaux. (French) [Some recent developments in the theory of fundamental groups] **85c:20032**

Zara, François Sur les couples fischeriens de largeur 1. (English summary) [On Fischer pairs of width 1] **85c:20033**

secondary classifications (20F34)

Abikoff, W. (with Appel, K.; Schupp, Paul E.) Lifting surface groups to  $\text{SL}(2, C)$ . **85d:30074**

Appel, K. See Abikoff, W.; et al., **85d:30074**

Gersten, S. M. Geometric automorphisms of a free group of rank at least three are rare. **85b:20054**

Kanenobu, Taiso Groups of higher-dimensional satellite knots. **85d:57018**

Nguyễn Việt Dũng The fundamental groups of the spaces of regular orbits of the affine Weyl groups. **85f:57001**

Schupp, Paul E. See Abikoff, W.; et al., **85d:30074**

Thomas, C. B. Splitting theorems for certain  $\text{PD}^3$ -groups. **85d:57015**

## 20F36 Braid groups

Gurso, G. G. Systems of generators for normalizers of certain elements of a braid group. (Russian) **85k:20125**

Jones, Vaughan F. R. Groupes de tresses, algèbres de Hecke et facteurs de type  $\text{II}_1$ . (English summary) [Braid groups, Hecke algebras and type  $\text{II}_1$  factors] **85h:20044**

Squier, C. The Burau representation is unitary. **85b:20056**

secondary classifications (20F36)

Kidwell, Mark E. Relations between the Alexander polynomial and summit power of a closed braid. **85b:57007**

## 20F38 Other groups related to topology or analysis

Birman, J. S. (with Lubotaky, Alex; McCarthy, John) Abelian and solvable subgroups of the mapping class groups. **85k:20126**

Lubotaky, Alex See Birman, J. S.; et al., **85k:20126**

McCarthy, John See Birman, J. S.; et al., **85k:20126**

Riley, Robert Nonabelian representations of 2-bridge knot groups. **85i:20043**

secondary classifications (20F38)

Brunner, A. M. (with Frame, Michael L.; Lee, Youn W.; Wielenberg, Norbert J.) Classifying torsion-free subgroups of the Picard group. **85h:57012**

Frame, Michael L. See Brunner, A. M.; et al., **85h:57012**

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Wajnryb, Bronisław A simple presentation for the mapping class group of an orientable surface. **85g:57007**

Wielenberg, Norbert J. See Brunner, A. M.; et al., **85h:57012**

## 20F40 Associated Lie structures

secondary classifications (20F40)

Cenkl, Bohumil (with Porter, Richard) Differential forms and torsion in the fundamental group. **85k:57003**

Porter, Richard See Cenkl, Bohumil, **85k:57003**

## 20F45 Engel conditions

Brandl, Rolf Engel cycles in finite groups. **85f:20030**

On groups with small Engel depth. **85b:20037**

On finite abelian-by-nilpotent groups. **85k:20050**

secondary classifications (20F45)

Nikolova, D. B. Groups with a two-variable commutator identity. **85h:20037b**

A class of identities in groups. (Russian) **85h:20037a**

## 20F50 Periodic groups

Belyaev, V. V. (with Sesekin, N. F.) Periodic groups with an almost regular involutive automorphism. (Russian) **85m:20058**

Imašov, A. N. (with Shunkov, V. P.) Two criteria for nonsimplicity of groups with an infinitely isolated subgroup. (Russian) **85m:20059**

Liman, F. N. Periodic groups which satisfy the normalizer condition for  $p$ -subgroups. (Russian) **85h:20045**

O'Shankil, A. Yu. Groups of bounded period with subgroups of prime order. (Russian) **85g:20052**

Phillips, Richard E. Existentially closed locally finite central extensions: multipliers and local systems. **85m:20060**

Sesekin, N. F. See Belyaev, V. V., **85m:20058**

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Stingl, Volker (with Turau, Volker) Locally finite  $\text{Syl}_p$ -groups. **85m:20061**

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secondary classifications (20F50)

Amberg, Bernhard Soluble products of two locally finite groups with min- $p$  for every prime  $p$ . **85d:20025**

Factorized groups with max, min and min- $p$ . **85m:20041**

Fomin, A. N. See Nefed'eva, N. D., **85h:20006**

Hickin, Kenneth K. (with Phillips, Richard E.) Isomorphism types in wreath products and effective embeddings of periodic groups. **85i:20034**

Nefed'eva, N. D. (with Fomin, A. N.) Transitive groups of permutations in which some almost  $p$ -central element stabilizes exactly one symbol. (Russian) **85h:20006**

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Sedova, E. I. Groups with abelian subgroups of finite rank. (Russian) **85g:20047**

Wehrfrits, B. A. F. Soluble-by-periodic skew linear groups. **85m:20066**

## 20F60 Ordered groups [See mainly 06F15.]

secondary classifications (20F60)

- Medvedev, N. Ya. Certain questions of the theory of partially ordered groups. (Russian) 85j:06013
- Pestov, G. G. See Zabarina, A. I. 85m:06036
- Zabarina, A. I. (with Pestov, G. G.) On Świerczkowski's theorem. (Russian) 85m:06036

## 20F99 None of the above, but in this section

- Cortés Monleón, María-Amparo  $H$ -constraint groups: new characterizations and properties. (Spanish. English summary) 85j:20037
- de Giovanni, Francesco Groups in which the intersection of any two incomparable subgroups is abelian. I. (Italian. English summary) 85g:20063
- Ivanov, F. A. (with Vysotina, L. A.) The Frattini subgroup of the uniform group of formally analytic transformations over the ring of integers. (Russian) 85j:20038
- Kemkhadze, Sh. S. Some quasilinear and radical classes of groups. (Russian. English and German summaries) 85c:20030
- Mikhailova, M. A. A factor space with respect to the action of a finite group generated by pseudoreflections. (Russian) 85k:20127
- Senashov, V. I. (with Shunkov, V. P.) A characterization of groups with a finite periodic part. (Russian) 85m:20062
- Shunkov, V. P. See Senashov, V. I. 85m:20062
- Vysotina, L. A. See Ivanov, F. A. 85j:20038

secondary classifications (20F99)

- Apps, A. B.  $\aleph_0$ -categorical finite extensions of Boolean powers. 85g:03051
- Chen, Chuan Chong (with Quimpo, N.) Hamiltonian Cayley graphs of order  $pq$ . 85c:05090
- Corovel, I. The sine functional equation for groups. 85d:39012
- Hilton, Peter On special group-automorphisms and their composition. 85k:20096
- Quimpo, N. See Chen, Chuan Chong. 85c:05090

## 20Gxx Linear algebraic groups (classical groups) (For arithmetic theory, see 11E57, 11H06; for geometric theory, see 14Lxx, 22Exx; for other methods in representation theory, see 22E45, 22E46, 22E47, 22E50, 22E55.)

- Platonov, V. P. (with Rapinchuk, S. A.) Algebraic groups. (Russian) 85h:20046
- Rapinchuk, S. A. See Platonov, V. P. 85h:20046

secondary classifications (20Gxx)

- Borel, A. ★ *Euvres: collected papers. Vol. I. (French)* 85f:01077a  
★ *Euvres: collected papers. Vol. II. (French)* 85f:01077b  
★ *Euvres: collected papers. Vol. III. (French)* 85f:01077c
- Conference:  
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- Katata ★ Open problems in algebraic groups. 85c:23002
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- Andersen, Henning Haahr Filtrations of cohomology modules for Chevalley groups. 85k:20128
- Asai, Teruaki Liftings and the zeta functions of the Deligne-Lusztig varieties. 85g:20054
- Unipotent characters of exceptional groups over finite fields  $F_q$  with small  $q$ . 85g:20055
- Unipotent characters of  $SO_{2n}^{\pm}$ ,  $Sp_{2n}$  and  $SO_{2n+1}$  over  $F_q$  with small  $q$ . 85d:20034
- Broughton, S. Allen A note on characters of algebraic groups. 85c:20034
- Deligne, Pierre (with Lusztig, George) Duality for representations of a reductive group over a finite field. II. 85b:20058
- Deriziotis, D. I. A proof of a Carter-Cline theorem on  $A_1$ -Weyl modules. (Russian summary) 85c:20035
- Digne, F. (with Michel, Jean) Remarques sur la dualité de Curtis. [Remarks on the Curtis duality] 85c:20036
- Dipper, Richard On irreducible modules of twisted groups of Lie type. 85f:20031
- Cow, R. Representations over  $p$ -adic fields of the finite general linear and unitary groups. 85k:20129
- Properties of the characters of the finite general linear group related to the transpose-inverse involution. 85k:20130
- Heinrich, Inge See Zassenhaus, Hans J. 85f:20034
- Howlett, R. B. (with Lehrer, G. I.) Representations of generic algebras and finite groups of Lie type. 85i:20044
- Lehrer, G. I. See Howlett, R. B. 85i:20044
- Lusztig, George See Deligne, Pierre. 85b:20058
- Matecni, T. Decomposition of products of symplectic group representations. 85b:20059
- Michel, Jean See Digne, F. 85c:20036
- Premet, A. A. (with Suprunenko, I. D.) The Weyl modules and the irreducible representations of the symplectic group with the fundamental highest weights. 85k:20131
- (with Suprunenko, I. D.) Quadratic modules for Chevalley groups over fields of odd characteristics. 85c:20037
- Putcha, Mohan S. Determinant functions on algebraic monoids. 85c:20038
- Sheji, T. On the Green polynomials of classical groups. 85f:20032
- Spaltenstein, N. A property of special representations of Weyl groups. 85a:20015

Nilpotent classes in Lie algebras of type  $F_4$  over fields of characteristic 2.

85g:20066

- Suprunenko, I. D. See Premet, A. A. 85c:20037 and 85k:20131
- Surowski, David B. Reflection compound representations of groups of type  $D_n$ . 85f:20033
- Tinberg, Nelsy B. Weights and admissible pairs. 85m:20063
- Wang, Jian Pan Coinduced representations and injective modules for hyperalgebra  $b$ . 85j:20039
- Zassenhaus, Hans J. (with Heinrich, Inge) Über die Ordnungen von Wohlfahrt. II. [On the orders of Wohlfahrt. II] 85f:20034

secondary classifications (20G05)

- Alvis, Dean Ratios of dual generic degrees of a finite Coxeter group. 85i:20013
- Brylinski, Jean-Luc (Co-)homologie d'intersection et faisceaux pervers. [Intersection (co)homology and perverse sheaves] 85i:32016a
- De Concini, Corrado (with Procesi, Claudio) Complete symmetric varieties. 85c:14070
- Fontaine, Jean-Marc (with Laffaille, Guy) Construction de représentations  $p$ -adiques. [Construction of  $p$ -adic representations] 85c:14028
- Formanek, E. Invariants and the ring of generic matrices. 85g:15031
- Gutkin, E. (with Slodowy, Peter) Cohomologie des variétés de drapeaux infinies. (English summary) [Cohomology of infinite flag varieties] 85a:14034
- Gyoja, Akihiko A generalized Poincaré series associated to a Hecke algebra of a finite or  $p$ -adic Chevalley group. 85k:20144a
- Hiss, Gerhard Die adjungierten Darstellungen der Chevalley-Gruppen. [The adjoint representations of the Chevalley groups] 85c:20134
- Hunter, D. B. The construction of irreducible normalized representations of the general linear group. 85c:15020
- Jakobsen, Hans Plesner Hermitian symmetric spaces and their unitary highest weight modules. 85a:17004
- Janusz, G. J. Orthogonal groups of some trace forms. 85i:11031
- Kac, Victor G. Root systems, representations of quivers and invariant theory. 85j:14088
- Kazimeta, V. A. See Vilenkin, N. Ya. 85c:20011
- Koppinen, Markku Decomposing and lifting hyperalgebras. 85c:16017
- Kostant, Bertram On finite subgroups of  $SU(2)$ , simple Lie algebras, and the McKay correspondence. 85b:22020
- Laffaille, Guy See Fontaine, Jean-Marc. 85c:14028
- Lusztig, George Singularities, character formulas, and a  $q$ -analog of weight multiplicities. 85m:17005
- Nakajima, Haruhisa Rings of invariants of finite groups which are hypersurfaces. 85c:20036
- Orlik, Peter (with Solomon, Louis) Coxeter arrangements. 85b:32016
- Panyushev, D. I. Regular elements in spaces of linear representations of reductive algebraic groups. (Russian) 85h:14005
- Procesi, Claudio See De Concini, Corrado. 85c:14070
- Schwarz, Gerald W. Invariant theory of  $G_2$ . 85c:20031
- Sehadr, C. S. Standard monomial theory and the work of Demazure. 85d:14067
- Slodowy, Peter See Gutkin, E. 85a:14034
- Solomon, Louis See Orlik, Peter. 85b:32016
- Springer, T. A. Quelques applications de la cohomologie d'intersection. [Some applications of intersection cohomology] 85i:32016b
- Vilenkin, N. Ya. (with Kazimeta, V. A.) Realization of certain complex representations of the general linear group over a finite field. (Russian) 85c:20011

## 20G10 Cohomology theory

- Friedlander, Eric Mark (with Parshall, B. J.) On the cohomology of algebraic and related finite groups. 85d:20035
- Parshall, B. J. See Friedlander, Eric Mark. 85d:20035
- Soulé, Christophe (with Tesuka, Michishige; Yagita, Nobuaki) Cohomological behaviour of the reduction modulo a prime of  $GL_3(\mathbb{Z})$ . 85i:20045
- Tesuka, Michishige See Soulé, Christophe; et al. 85i:20045
- Yagita, Nobuaki See Soulé, Christophe; et al. 85i:20045
- secondary classifications (20G10)
- Andersen, Henning Haahr Filtrations of cohomology modules for Chevalley groups. 85k:20128
- Carlson, Jon F. The cohomology of irreducible modules over  $SL(2, p^n)$ . 85a:20025
- Jardine, J. F. On the homotopy groups of algebraic groups. 85d:18009
- Kassel, Christian Le groupe  $K_3(\mathbb{Z}[e])$  n'a pas de  $p$ -torsion pour  $p \neq 2$  et 3. [The group  $K_3(\mathbb{Z}[e])$  has no  $p$ -torsion for  $p \neq 2$  and 3] 85b:18008
- Waterhouse, William C. Twisted forms of the determinant. 85c:11040

## 20G15 Linear algebraic groups over arbitrary fields

- Borovik, A. V. Classification of periodic linear groups over fields of odd characteristic. (Russian) 85k:20132
- Ellers, E. W. Cyclic decomposition of unitary spaces. 85k:20133
- Hiss, Gerhard Die adjungierten Darstellungen der Chevalley-Gruppen. [The adjoint representations of the Chevalley groups] 85c:20134
- Kato, Shin-ichi A realization of irreducible representations of affine Weyl groups. 85b:20060
- King, Oliver H. Imprimitivity maximal subgroups of the orthogonal, special orthogonal, unitary and special unitary groups. 85d:20036
- Li, Shang Zhi Certain classes of maximal subgroups in  $PSL(n, F)$ . (Chinese) 85c:20031
- Lusztig, George Left cells in Weyl groups. 85f:20035
- Nobusawa, Nobuo Orthogonal groups and symmetric sets. 85a:20016
- Ren, Hong Shuo See Wan, Zhe Xian. 85m:20064
- Sharommet, A. A. Abstract isomorphisms of solvable algebraic groups. (Russian) 85i:20046



- Springer, T. A. *Séries de Poincaré dans la théorie des invariants*. [Poincaré series in invariant theory] 85g:20057
- Stingl, Volkmar *Unendliche Gruppen mit einem lokalen System aus endlichen Ree-Gruppen vom Typ  ${}^2G_2$* . [Infinite groups with a local system of finite Ree groups of type  ${}^2G_2$ ] 85e:20033
- Suprunenko, D. A. *Sylow monomial  $\pi$ -subgroups of the general linear group*. (Russian. English summary) 85k:20135
- Takeuchi, Mitsuhiro *A hyperalgebraic proof of the isomorphism and isogeny theorems for reductive groups*. 85d:20037
- Völklein, Helmut *Orthogonale Gruppen und die Bedingung der freien Beweglichkeit bei indefiniter Metrik*. [Orthogonal groups and the condition of free mobility with indefinite metric] 85f:20036
- Wan, Zhe Xian (with Ren, Hong Shuo) *U-groups of dimension 2 with nonzero Witt index*. (Chinese) 85m:20064
- Wetherill, B. W. *Polynomial functions of the odd orthogonal group*. 85b:20061

## secondary classifications (20G15)

- Ash, Avner *Small-dimensional classifying spaces for arithmetic subgroups of general linear groups*. 85k:22027
- Björner, Anders *Some combinatorial and algebraic properties of Coxeter complexes and Tits buildings*. 85m:52003
- Borel, A. *On free subgroups of semisimple groups*. 85e:22009
- Ellers, E. W. (with Frank, Rolfdieter; Nolte, W.) *Bireflectionality of the weak orthogonal and the weak symplectic groups*. 85e:11027
- Frank, Rolfdieter *See Ellers, E. W.; et al., 85e:11027*
- Griess, Robert L., Jr. *Quotients of infinite reflection groups*. 85j:20040
- Knop, Friedrich *Mehrfach transitive Operationen algebraischer Gruppen*. [Multiply transitive operations of algebraic groups] 85b:14084
- Konarak, Jerzy *A pathological example of an action of  $k^*$* . 85j:14058a
- Properties of projective orbits of actions of affine algebraic groups. 85j:14058b
- Luna, D. (with Vust, Th.) *Plongements d'espaces homogènes*. [Embeddings of homogeneous spaces] 85a:14035
- Nolte, W. *See Ellers, E. W.; et al., 85e:11027*
- Premet, A. A. *Algebraic groups associated with Lie  $p$ -algebras of Cartan type*. (Russian) 85j:17031
- Selz, Gary M. *Parabolic subgroups containing the centralizer of a unipotent element*. 85f:20039a
- Unipotent subgroups of groups of Lie type. 85f:20039b
- Takeuchi, Mitsuhiro *Generators and relations for the hyperalgebras of reductive groups*. 85d:14063
- Thomas, S. D. *An identification theorem for the locally finite nontwisted Chevalley groups*. 85f:20040a
- The classification of the simple periodic linear groups. 85f:20040b
- Tomanov, G. M. *Generalized group identities in linear groups*. (Russian) 85m:30072
- Vust, Th. *See Luna, D., 85a:14035*

## 20G20 Linear algebraic groups over the reals, the complexes, the quaternions

- Dolgachev, Igor V. (with Goldstein, Norman) *On the Springer resolution of the minimal unipotent conjugacy class*. 85m:20065
- Goldstein, Norman *See Dolgachev, Igor V., 85m:20065*
- Griess, Robert L., Jr. *Quotients of infinite reflection groups*. 85j:20040
- Kern-Iaberner, Gabriele (with Rosenberger, Gerhard) *Einige Bemerkungen über Untergruppen der  $PSL(2, C)$* . [Some comments on subgroups of  $PSL(2, C)$ ] 85i:20047
- Rosenberger, Gerhard *See Kern-Iaberner, Gabriele, 85i:20047*
- Weisfeiler, Boris *Post-classification version of Jordan's theorem on finite linear groups*. 85j:20041

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- Benedetti, R. (with Cragnolini, P.) *On simultaneous diagonalization of one Hermitian and one symmetric form*. 85e:15033
- Boja, N. (with Grecu, E.) *On the symplectic semi-pseudo-orthogonal group*. (Romanian summary) 85m:15017
- Brion, Michel *Invariants de plusieurs formes binaires*. (English summary) [Invariants of several binary forms] 85d:15037
- Cragnolini, P. *See Benedetti, R., 85e:15033*
- Eck, David *Invariants of  $k$ -jet actions*. 85h:58014
- Grecu, E. *Sur les espaces de Grassmann réels, complexes et quaternioniques*. [Real, complex and quaternionic Grassmann spaces] 85h:53037
- See also Boja, N., 85m:15017*
- James, David A. *Results of a classification for subgroups of  $SL(2, R)$* . 85b:11036
- Kimura, Tatsuao *A classification of prehomogeneous vector spaces of simple algebraic groups with scalar multiplications*. 85d:32059
- Kursov, V. V. *Commutators in real Chevalley groups*. (Russian. English summary) 85j:22015
- Rubel, Lee A. *Conformal inequivalence of annuli and the first-order theory of subgroups of  $PSL(2, R)$* . 85a:30018
- Souček, V. *H-valued differential forms on  $H$* . 85h:58012
- Tinberg, Nalsey B. *Weights and admissible pairs*. 85m:20063
- Venkov, B. B. *Unimodular lattices and strongly regular graphs*. (Russian. English summary) 85b:11051

## 20G25 Linear algebraic groups over local fields and their integers

- Golubchik, I. Z. *Subgroups of the general linear group  $GL_n(R)$  over an associative ring  $R$* . (Russian) 85j:20042
- Köhler, Peter (with Meixner, Thomas; Wester, Michael) *The affine building of type  $A_2$  over a local field of characteristic two*. 85j:20043
- Meixner, Thomas *See Köhler, Peter; et al., 85j:20043*

- Wang, Ren Fa (with You, Hong) *The structure of symplectic groups over semilocal rings*. (Chinese) 85j:20044
- Wester, Michael *See Köhler, Peter; et al., 85j:20043*
- You, Hong *See Wang, Ren Fa, 85j:20044*

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- Choucroun, Francis *Groupes opérant simplement transitivement sur un arbre homogène et plongements dans  $PGL_2(k)$* . (English summary) [Groups acting simply transitively on a homogeneous tree and embeddings in  $PGL_2(k)$ ] 85d:23021
- Margulis, G. A. *Arithmeticity of the irreducible lattices in the semisimple groups of rank greater than 1*. 85j:22021
- Prasad, Gopal (with Raghunathan, M. S.) *Tame subgroup of a semisimple group over a local field*. 85b:22011
- Raghunathan, M. S. *See Prasad, Gopal, 85b:22011*

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- Horadam, K. J. *Submodules of free Lie rings*. 85g:20058

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- Bak, Anthony (with Rehmann, Ulf) *The congruence subgroup and metaplectic problems for  $SL_{n \geq 2}$  of division algebras*. 85j:11041
- Flöge, Dieter *Zur Struktur der  $PSL_2$  über einigen imaginär-quadratischen Zahlringen*. [On the structure of  $PSL_2$  over some imaginary quadratic number rings] 85c:11043
- Mathieu, Philippe *Le principe de Hasse et les groupes semi-simples. I*. [The Hasse principle and semisimple groups. I] 85f:11026
- Rehmann, Ulf *See Bak, Anthony, 85j:11041*

## 20G35 Linear algebraic groups over adèles and other rings and schemes

- Abe, Eichi *Whitehead groups of Chevalley groups over polynomial rings*. 85d:20038
- Bloshchitsyn, V. Ya. *Automorphisms of the symplectic group  $Sp_4$  over a local ring*. (Russian) 85a:20017
- Borevich, Z. I. (with Vavilov, N. A.) *Arrangement of subgroups containing a group of block diagonal matrices in the general linear group over a ring*. (Russian) 85j:20046b
- (with Vavilov, N. A.) *The net determinant over a Bezoutian local ring*. (Russian) 85j:20046c
- (with Kolotilina, L. Yu.) *The subnormalizer of net subgroups in the general linear group over a ring*. (Russian) 85j:20046d
- Bürgisser, B. *Elements of finite order in symplectic groups*. 85b:20062
- Cao, Xi Hao (with Zhang, Yi Min) *Automorphisms of the two-dimensional linear groups over a class of Euclidean rings*. (Chinese. English summary) 85h:20047
- See also Liu, Yun Ying; et al., 85j:20045*
- Dybko, E. V. *See Vavilov, N. A., 85i:20049*
- Kolotilina, L. Yu. *See Borevich, Z. I., 85j:20046d*
- Levchuk, V. M. *Connections between the unitriangular group and certain rings. II. Groups of automorphisms*. (Russian) 85d:20039
- Li, Li *See Zhou, Fang, 85a:20019*
- Lin, Gong Yuan *Automorphisms of  $PSL_n(V)$  over local rings*. (Chinese. English summary) 85i:20048
- Liu, Yun Ying (with Zhang, Yi Min; Cao, Xi Hao) *Automorphisms of the two-dimensional linear groups over a Euclidean ring*. (Chinese. English summary) 85j:20045
- Matthews, C. R. (with Vaserstein, Leonid; Weisfeiler, Boris) *Congruence properties of Zarski-dense subgroups. I*. 85d:20040
- Ren, Hong Shuo *Partition rings and a class of automorphisms*. (Chinese) 85e:20033
- See also Wan, Zhe Xian, 85h:20048*
- Vaserstein, Leonid *See Matthews, C. R.; et al., 85d:20040*
- Vavilov, N. A. *Parabolic subgroups of the Chevalley group over a commutative ring*. (Russian) 85j:20046a
- The group  $SL_n$  over a Dedekind ring of arithmetic type. (Russian. English summary) 85a:20018
- (with Dybko, E. V.) *Subgroups of the general symplectic group containing the group of diagonal matrices. II*. (Russian) 85i:20049
- See also Borevich, Z. I., 85j:20046b and 85j:20046c*
- Wan, Zhe Xian (with Yang, Jin Gen) *Automorphisms of the two-dimensional projective linear group over the ring of integral quaternions*. (Chinese) (Not in MR)
- (with Yang, Jin Gen) *Automorphisms of 2-dimensional projective quaternion unimodular groups*. 85j:20047
- (with Ren, Hong Shuo) *Automorphisms of linear groups of rank 2 over local rings of characteristic 2*. (Chinese) 85h:20048
- Wang, Ren Fa (with You, Hong) *Automorphisms of symplectic groups over semilocal rings*. (Chinese) 85i:20050a
- See also You, Hong, 85i:20050b*
- Wehrhritz, B. A. F. *Soluble-by-periodic skew linear groups*. 85m:20066
- Weisfeiler, Boris *See Matthews, C. R.; et al., 85d:20040*
- Yang, Jin Gen *See Wan, Zhe Xian, 85j:20047 and (Not in MR)*
- You, Hong *A note on defining relations of two-dimensional linear groups over a class of rings*. (Chinese. English summary) 85g:20059
- (with Wang, Ren Fa) *Automorphisms of two-dimensional linear groups over semilocal rings*. (Chinese) 85i:20050b
- See also Wang, Ren Fa, 85i:20050a*
- Zhang, Yi Min *See Cao, Xi Hao, 85h:20047 and Liu, Yun Ying; et al., 85j:20045*
- Zhou, Fang (with Li, Li) *A theorem on the generators of the general linear group over a local ring  $R$* . (Chinese. English summary) 85a:20019

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- Zhang, Yong Zheng *Automorphisms of  $PO_n(V)$  over a local ring  $R$* . (Chinese. English summary) 85c:11039

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- Aral, Turakli On the zeta functions of the varieties  $X(w)$  of the split classical groups and the unitary groups. 85a:20020
- Beynon, W. M. (with Spaltenstein, N.) Green functions of finite Chevalley groups of type  $E_n$  ( $n = 6, 7, 8$ ). 85b:20130
- Borovik, A. V. Imbeddings of finite Chevalley groups and periodic linear groups. (Russian) 85b:20137
- Cheng, Ying On the first Cartan invariants in characteristic 2 of the groups  $SL_3(2^m)$  and  $SU_3(2^m)$ . 85b:20138
- Darafsheh, M. R. Maximal subgroups of  $PSL_n(q)$ ,  $q = p^m$ ,  $p$  prime, which contain a Sylow  $p$ -subgroup. (Italian summary) 85j:20048
- Derisiola, D. I. The centralizers of semisimple elements of the Chevalley groups  $E_7$  and  $E_8$ . 85g:20000
- ★ Conjugacy classes and centralizers of semisimple elements in finite groups of Lie type. 85b:20139
- Edgar, W. L.  $PGL(2, 7)$  and  $PSL(2, 7)$ . 85m:20007
- Falme, Giorgio A remark on the geometry of Sylow  $p$ -subgroups of  $PSU(3, q^2)$ . (Italian summary) 85j:20049
- Ishibashi, Hiroyuki Generation of classical groups over finite fields. 85d:20041
- Kawanaka, Noriaki Liftings of irreducible characters of finite classical groups. II. 85f:20037
- Lehrer, G. I. The spherical building and regular semisimple elements. 85b:20040
- Li, Shang Zhi On the maximality of certain orthogonal groups embedded in symplectic and unitary groups, respectively. 85c:20039
- Maximal subgroups of subgroups of finite classical groups containing root subgroups. (Chinese) (Not in MR)
- McGovern, K. On the lifting theory of finite groups of Lie type. 85b:20050
- Nakajima, Haruhisa Regular rings of invariants of unipotent groups. 85f:20038
- Prasad, Gopal Tame component of the Schur multipliers of finite groups of Lie type. 85c:20040
- Seitz, Gary M. Parabolic subgroups containing the centralizer of a unipotent element. 85c:20039
- Unipotent subgroups of groups of Lie type. 85f:20039b
- Spaltenstein, N. See Beynon, W. M., 85b:20138
- Surovski, David B. Reflection sieve obstructions in finite groups of type  $D_n$ . 85b:20063
- Thomas, S. D. An identification theorem for the locally finite nontwisted Chevalley groups. 85f:20040a
- The classification of the simple periodic linear groups. 85f:20040b
- Wong, W. J. Abelian unipotent subgroups of finite unitary and symplectic groups. 85c:20034

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- Alyab'eva, V. G. Geometric interpretation of finite simple groups and their parabolic subgroups. (Russian) 85b:20017
- Blaum, Mario Factorizations of the simple groups  $PSL(3, q)$  and  $PSU(3, q^2)$ . 85b:20030
- Carlson, Jon F. The cohomology of irreducible modules over  $SL(2, p^n)$ . 85a:20025
- Digne, F. (with Michel, Jean) Remarques sur la dualité de Curtis. [Remarks on the Curtis duality] 85c:20036
- Gow, R. Representations over  $p$ -adic fields of the finite general linear and unitary groups. 85b:20129
- Gross, Fletcher Odd order Hall subgroups of  $GL(n, q)$  and  $Sp(2n, q)$ . 85b:20061
- Jungnickel, Dieter Zur Einfachheit der Gruppen  $PSL(2, q)$ . (German summary) [On the simplicity of the groups  $PSL(2, q)$ ] 85c:20017
- Kazimeta, V. A. See Vilenkin, N. Ya., 85c:20011
- Levchuk, V. M. Connections between the unitriangular group and certain rings. II. Groups of automorphisms. (Russian) 85d:20039
- Li, Shang Zhi Certain classes of maximal subgroups in  $PSL(n, F)$ . (Chinese) 85c:20031
- Michel, Jean See Digne, F., 85c:20036
- Robertson, E. F. (with Williams, P. D.) A presentation of  $PGL(2, p)$  with three defining relations. 85b:20105
- Shahabi Shojadi, M. A. Schur indices of irreducible characters of  $SL(2, q)$ . 85b:20012
- Shi, Sheng Ming The rank 3 permutation representations of finite groups of type  $G_2$ . 85b:20013
- Tinberg, Naley B. Weights and admissible pairs. 85m:20063
- Vilenkin, N. Ya. (with Kazimeta, V. A.) Realization of certain complex representations of the general linear group over a finite field. (Russian) 85c:20011
- Williams, P. D. See Robertson, E. F., 85b:20105

## 20G45 Applications to physics; explicit representations

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- Allaouas, Sigitas (with Georgieva, A.; Raychev, P.; Roussev, R.) Decomposition of the Hamiltonian of the interacting vector boson model in irreducible terms. 85i:81139
- Boyer, Charles P. (with Kalnina, E. G.; Winternitz, P.) Completely integrable relativistic Hamiltonian systems and separation of variables in Hermitian hyperbolic spaces. 85c:70010
- Chen, Jin Quan (with Gao, Mei Juan; Shi, Yi Jin; Vallières, Michel; Feng, Da Huan) Tables of one-body CFP for group chains  $U(mn) \supset U(m) \times U(n)$  and  $U(mp + nq/mq + np) \supset U(m/n) \times U(p/q)$ . 85f:81029
- Cummins, C. J. (with King, Ronald Curtis) Symmetry breaking patterns for third-rank totally antisymmetric tensor representations of unitary groups. 85j:81024
- Feng, Da Huan See Chen, Jin Quan; et al., 85f:81029
- Gao, Mei Juan See Chen, Jin Quan; et al., 85f:81029
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- King, Ronald Curtis See Cummins, C. J., 85j:81024
- Koh, Inh Gyu (with Patera, J.; Rousseau, Christiane) Clebsch-Gordan coefficients for  $SU(5) \supset SU(3) \times SU(2) \times U(1)$  theories. 85c:22025

- Matolesi, T. Decomposition of products of symplectic group representations. 85b:20059
- Nelson, David R. (with Widom, Michael) Symmetry, Landau theory and polytope models of glass. 85j:82041
- Nikam, R. S. (with Sarma, C. R.) Double-Gelfand boson polynomials and the permutation group. 85b:81036
- Patera, J. See Koh, Inh Gyu; et al., 85c:22025
- Raychev, P. See Allaouas, Sigitas; et al., 85i:81139
- Rousseau, Christiane See Koh, Inh Gyu; et al., 85c:22025
- Roussev, R. See Allaouas, Sigitas; et al., 85i:81139
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- Wolper, James S. Some intersection properties of the fibres of Springer's resolution. 85b:20140

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- Djoković, Dragomir Characterization of dilatations which are expressible as a product of three transvections or three reflections. 85m:15006
- Fine, Benjamin Groups whose torsion-free subgroups are free. 85i:20032
- Gotsmann, Gerd Hilbertschemata von Kurven im  $P^3$  mit hohem Grad und niedrigem Geschlecht sind einfach-zusammenhängend. [Hilbert schemes of curves in  $P^3$  with high degree and low genus are simply connected] 85e:14010
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- Kobayashi, Zenji (with Morita, Jun) Automorphisms of certain root lattices. 85i:17017
- Maxson, C. J. (with Oswald, A.) The centralizer of the general linear group. 85b:16045
- Morita, Jun See Kobayashi, Zenji, 85i:17017
- Oswald, A. See Maxson, C. J., 85b:16045
- Slodowy, Peter Chevalley groups over  $C((t))$  and deformations of simply elliptic singularities. 85e:14008
- Platonic solids, Kleinian singularities, and Lie groups. 85f:14037
- Steinberg, Robert Kleinian singularities and unipotent elements. (Russian) 85a:14025

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- Аранасов, В. Н. ★ Дискретные группы преобразования и структуры многообразия. [Discrete transformation groups and structures on manifolds] 85i:57002
- 20H05 Unimodular groups, congruence subgroups [See also 11F06, 22E40, 51F20.]
- Helm, P. R. A note on noncongruence subgroups. 85d:20042
- Mason, A. W. Anomalous normal subgroups of the modular group. 85b:20141
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- Carter, David (with Keller, Gordon) Bounded elementary generation of  $SL_n(O)$ . 85f:11083
- Gilman, Jane Structures of elliptic irreducible subgroups of the modular group. 85g:11035
- Heinrich, Inge See Zassenhaus, Hans J., 85f:20034
- Higman, G. (with Mushtaq, Q.) Coset diagrams and relations for  $PSL(2, Z)$ . (Arabic summary) 85b:11044
- Humphreys, James E. J. ★ Арифметические группы. (Russian) [Arithmetic groups] 85a:11009
- Keller, Gordon See Carter, David, 85f:11083
- Lacroix, N. H. J. (with Levesque, C.) Sur les sous-groupes normaux de  $SL_2$  sur un anneau local. [On the normal subgroups of  $SL_2$  over a local ring] 85b:11037
- Larcher, H. The cusp amplitudes of the congruence subgroups of the classical modular group. II. 85i:11034
- Levesque, C. See Lacroix, N. H. J., 85b:11037
- Mushtaq, Q. See Higman, G., 85d:11044
- (Platonov, V. P.) See Humphreys, James E. J., 85a:11009
- (Popov, V. L.) See Humphreys, James E. J., 85a:11009
- Soulé, Christophe (with Teruka, Michihige; Yagita, Nobuaki) Cohomological behaviour of the reduction modulo a prime of  $GL_3(Z)$ . 85i:20045
- Teruka, Michihige See Soulé, Christophe; et al., 85i:20045
- Yagita, Nobuaki See Soulé, Christophe; et al., 85i:20045
- Zassenhaus, Hans J. (with Heinrich, Inge) Über die Ordnungen von Wohlfahrt. II. [On the orders of Wohlfahrt. II] 85f:20034

## 20H10 Fuchsian groups and their generalizations [See also 11F06, 22E40, 30F35, 32Nxx.]

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- Fine, Benjamin On power conjugacy and SQ-universality for Fuchsian and Kleinian groups. 85m:20068
- Grayson, Matthew A. The orbit space of a Kleinian group: Riley's modest example. 85b:20065
- Riley, Robert Applications of a computer implementation of Poincaré's theorem on fundamental polyhedra. 85b:20064
- Solitar, Donald See Burns, R. G., 85c:20035

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- Bertin, José Surfaces réglées non compactes et groupes discrets. [Noncompact ruled surfaces and discrete groups] 85m:14057
- Bujalance, E. Klein surfaces as orbit spaces of NEC groups. 85g:30079
- Furusawa, Haruichi The limit set of deformations of some Fuchsian groups. 85d:30070
- Glanser, S. (with Weiss, B.) Minimal transformations with no common factor need not be disjoint. 85a:22016
- Gutswiller, Martin C. Stochastic behavior in quantum scattering. 85d:11059
- Macbeath, A. M. Residual nilpotency of Fuchsian groups. 85e:30080
- Maskit, Bernard Parabolic elements in Kleinian groups. 85a:30073
- Nicholls, P. J. Ford and Dirichlet regions for discrete groups of hyperbolic motions. 85j:30094
- Patterson, S. J. Further remarks on the exponent of convergence of Poincaré series. 85g:30080
- Ratner, Marina Ergodic theory in hyperbolic space. 85b:58140
- Strebel, R. Explicit resolutions for the binary polyhedral groups and for other central extensions of the triangle groups. 85d:20046
- Weiss, B. See Glanser, S., 85a:22016

20H15 Other geometric groups, including crystallographic groups  
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- Chieh, Chung Geometric units in tetragonal crystal structures. 85a:20021
- Efros, P. P. Some hypercrystallographic  $p$ -symmetries. (Russian) 85k:20142
- Fischer, Werner (with Koch, Elke) On the equivalence of point configurations due to Euclidean normalizers (Cheshire groups) of space groups. 85a:20022
- Greenberg, Leon Homomorphisms of triangle groups into  $SO(3)$ . 85k:20143
- Guo, Dong Yao (with Liu, Yong Sheng) Structure factor type theorems. (Chinese) (Not in MR)
- Gyoja, Akihiko A generalized Poincaré series associated to a Hecke algebra of a finite or  $p$ -adic Chevalley group. 85k:20144a  
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- Hoare, A. H. M. (with Singerman, D.) The orientability of subgroups of plane groups. 85g:20061
- Hurley, A. C. Simply subducible groups. Ray groups and projectors for double groups and space groups. 85a:20023
- Israilov, M. I. (with Shamsiev, E. A.) The number of linearly independent invariant forms of finite groups of rotations. (Russian) 85k:20145
- Jarić, Marko V. (with Senchal, Marjorie) Space groups and their isotropy subgroups. 85m:20069
- Karpova, Yu. S. Junior three-dimensional groups of  $(p, 2)$ - and  $(p2, 2)$ -symmetry. (Russian) 85c:20051
- Koch, Elke See Fischer, Werner, 85a:20022
- Liu, Yong Sheng See Guo, Dong Yao, (Not in MR)
- Lungu, A. P. Classification of groups of  $W$ -symmetry. (Russian) 85j:20050  
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- Nakajima, Haruhisa Rings of invariants of finite groups which are hypersurfaces. 85c:20036
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- Orlik, Peter (with Solomon, Louis) A character formula for the unitary group over a finite field. 85b:20052
- Schwarzenberger, R. L. E. Colour symmetry. 85b:20053
- Senchal, Marjorie Color symmetry and colored polyhedra. 85b:20066  
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- Solomon, Louis See Orlik, Peter, 85b:20052
- Wagreich, Philip The growth function of a discrete group. 85k:20146
- Wolny, Wolfgang Merkwürdige Fundamentalbereichstypen der 17 diakreten Bewegungsgruppen. [Strange fundamental domain types of the 17 discrete motion groups] 85b:20067
- Zaleskii, A. E. Reducible linear groups generated by pseudoreflections. (Russian. English summary) 85d:20043
- Zamorzaev, A. M. (with Nastas, L. N.) Groups of symmetry of semisimilarity. (Russian) 85f:20041

## secondary classifications (20H15)

- Angelova, M. N. See Kotsev, J. N.; et al., 85a:20006
- Armstrong, Robin L. See Morra, Rose M., 85m:22110
- Aroyo, M. I. See Kotsev, J. N.; et al., 85a:20006
- Beardon, Alan F. ★ The geometry of discrete groups. 85d:22026
- Benson, C. T. See Grove, L. C., 85m:20001
- Bigalke, Hans-Günter ★ Kugelgeometrie. (German) [Spherical geometry] 85k:51001
- Birman, J. L. See Litvin, D. B.; et al., 85f:82049
- Bolokhov, A. A. See Lyakhovskii, V. D., 85i:22041
- van den Broek, P. M. The Clebsch-Gordan coefficients of the crystallographic space groups. (German summary) (Not in MR)
- Brown, Julia M. Nowlin On constructing finite projective planes from groups. 85h:51015
- Büttner, Wolfram On 4-dimensional translation planes admitting a Suzuki group as group of automorphisms. 85f:20007
- Chung, S. J. (with Hahn, Th.; Klee, W. E.) Nomenclature and generation of three-periodic nets: the vector method. 85c:20058
- Fumi, F. G. (with Ripamonti, C.) Tensor properties and rotational symmetry of crystals. III. Use of symmetrized components in group  $3(3_2)$ . 85c:82061
- Gratias, D. See Portier, R., 85g:82092
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- Grundhöfer, Theo Projektivitätengruppen von Translationsebenen. [Projectivity groups of translation planes] 85j:51001
- Hahn, Th. See Chung, S. J.; et al., 85c:82058
- Hanrath, W. See Plesken, Wilhelm, 85m:11036
- Johnson, Norman Lloyd Representations of  $SL(2, 4)$  on translation planes of even order. 85j:51010
- King, Oliver H. Imprimitivity maximal subgroups of the orthogonal, special orthogonal, unitary and special unitary groups. 85d:20036
- Klee, W. E. See Chung, S. J.; et al., 85c:82058
- Klein, D. J. Semiregular induction of group representations. 85g:20019
- Kotsev, J. N. (with Aroyo, M. I.; Angelova, M. N.) Isoscalar factors for hexagonal and trigonal Shubnikov point groups. 85a:20006  
See also Litvin, D. B.; et al., 85f:82049
- Litvin, D. B. (with Kotsev, J. N.; Birman, J. L.) Physical applications of crystallographic color groups: Landau theory of phase transitions. 85f:82049
- Lyakhovskii, V. D. (with Bolokhov, A. A.) ★ Группы симметрии и элементарные частицы. (Russian) [Symmetry groups and elementary particles] 85i:22041
- Majumdar, Subrata Free resolutions for certain classes of groups. 85d:20045  
Free resolutions for certain classes of groups. 85b:20056
- Mason, Geoffrey Orthogonal geometries over  $GF(2)$  and actions of extraspecial 2-groups on translation planes. 85i:51023
- Mikhailova, M. A. A factor space with respect to the action of a finite group generated by pseudoreflections. (Russian) 85k:20127
- Moppert, C. F. Generating the group of hyperbolic motions by powers of two parallel displacements. 85c:51032
- Morra, Rose M. (with Armstrong, Robin L.) Group actions as applied to symmetry breaking in hexagonal crystals with space group  $P6_3/m$ . (French summary) 85m:82110
- Plesken, Wilhelm (with Hanrath, W.) The lattices of six-dimensional Euclidean space. 85m:11036
- Pond, R. C. (with Vlachavas, D. S.) Bicrystallography. 85b:82035
- Portier, R. (with Gratias, D.) Symmetry and phase transformation. 85g:82092
- Ripamonti, C. See Fumi, F. G., 85c:82061
- Shull, R. Collineations of projective planes of order 9. 85k:51014
- Vinberg, E. B. Discrete groups of reflections in Lobachevskii spaces of large dimensions. (Russian) 85c:51028
- Vlachavas, D. S. See Pond, R. C., 85b:82035
- Warner, N. P. The symmetry groups of the regular tessellations of  $S^2$  and  $S^3$ . 85b:83040
- Weiss, Asia Ivić Twisted honeycombs  $\{3, 5, 3\}_2$ . 85f:52022
- Whittaker, E. J. W. Graphic representation and nomenclature of the four-dimensional crystal classes. II. The individual symmetry operations. 85h:51026
- Wilker, J. B. Groups of elliptic Möbius transformations. 85m:51009
- Yoshida, Masaaki Discrete reflection groups in the parabolic subgroup of  $SU(n, 1)$  and generalized Cartan matrices of Euclidean type. 85g:32053
- Zamorzaev, E. A. Finiteness of the number of faces of a polyhedron in a regular partition for the similarity symmetry group. (Russian) 85m:52011
- Zhuk, I. K. Fundamental tetrahedra in Euclidean and Lobachevskii spaces. (Russian) 85f:52039

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- Gonçalves, Jairo Z. See Mandel, Arnaldo, 85m:20071
- Kamiya, Shigeyasu Notes on nondiscrete subgroups of  $\bar{U}(1, n; F)$ . 85f:20042
- Korlyukov, A. V. Linear groups generated by two-dimensional elements of order  $r \geq 5$ . (Russian) 85g:20062
- Levchuk, V. M. A remark on a theorem of L. Dickson. (Russian) 85m:20070
- Mandel, Arnaldo (with Gonçalves, Jairo Z.) Free  $k$ -tuples in linear groups. 85m:20071
- Suprunenko, D. A. Determinants of matrices of a minimal irreducible group. (Russian) 85k:20147
- Tomanov, G. M. Generalized group identities in linear groups. (Russian) 85m:20072
- Völklein, Helmut Fahrenttransitive lineare Gruppen mit diagonalisierbarer Standardgruppe. [Flag-transitive linear groups with diagonalizable isotropy groups] 85b:20068

## secondary classifications (20H20)

- Albano, C. Four-parameter subgroups of the triangular group of the projective space  $P_3$ . (Italian. French summary) 85g:53011a
- D'Andrea, Antonina (with Utano, Rosanna) Subgroups of one, two, and three parameters of the triangular group in the projective space  $P_3$ . (Italian) 85g:53011c
- Dias da Silva, J. A. See de Oliveira, G. N.; et al., (85g:15005)
- Eilers, E. W. Projective collineations as products of homologies, elations, and projective reflections. 85f:51002
- Greco, Angela Five-parameter subgroups of the triangular group of the projective space  $P_3$ . (Italian. French summary) 85g:53011b
- Hughes, M. C. Representations of complex imprimitive reflection groups. 85d:20010
- James, David A. Results of a classification for subgroups of  $SL(2, R)$ . 85b:11036
- de Oliveira, G. N. (with Santana, Ana P.; Dias da Silva, J. A.) Equality of decomposable symmetric tensors (Portuguese). (Portuguese) (See 85g:15005)
- Santana, Ana P. See de Oliveira, G. N.; et al., (85g:15005)
- Utano, Rosanna See D'Andrea, Antonina, 85g:53011c
- Vol'vachev, R. T. Linear representation of certain groups with one defining relation. (Russian. English summary) 85m:20051
- Wehrhrits, B. A. F. Soluble-by-periodic skew linear groups. 85m:20066
- Zaleskii, A. E. Reducible linear groups generated by pseudoreflections. (Russian. English summary) 85d:20043



## 20H25 Other matrix groups over rings

- Ishikashi, Hiroyuki Multiplicative and transitive symplectic groups. 85d:20044  
 Wahrfrits, B. A. F. Nilpotence in certain linear groups over division rings. 85g:20063  
 On division rings generated by polycyclic groups. 85c:20037

## secondary classifications (20H25)

- Fariss, Daniel R. Multiplicative invariants. 85b:18043  
 Khlebnits, S. G. Sufficient conditions for normality of a subgroup of elementary matrices. (Russian) 85j:18015  
 Lacroix, N. H. J. (with Levesque, C.) Sur les sous-groupes normaux de  $SL_2$  sur un anneau local. [On the normal subgroups of  $SL_2$  over a local ring] 85b:11037  
 Levesque, C. See Lacroix, N. H. J., 85b:11037  
 Snider, Robert L. Solvable linear groups over division rings. 85g:20014  
 Wahrfrits, B. A. F. The upper central factors of certain skew-linear groups. 85c:20037  
 Complete reducibility in skew linear groups. 85g:20020  
 On certain soluble skew-linear groups. 85c:20039

## 20H30 Other matrix groups over finite fields

- Baumann, Bernd Symmetrische Singer-Zyklen über Körpern der Charakteristik 2. [Symmetric Singer cycles over fields of characteristic 2] 85k:20148  
 Dye, R. H. Maximal subgroups of symplectic groups stabilizing spreads. 85b:20054  
 Iwasawa, I. D. Sylow 2-subgroups of the group  $GL_n(q)$ . (Russian) 85k:20149

## 20Jxx Connections with homological algebra and category theory

## 20J05 Homological methods in group theory

- Arnold, James E., Jr. A group with infinite permutation projective dimension. 85h:20055  
 Bouc, Serge Modules de Möbius. (English summary) [Möbius modules] 85g:20064  
 Homologie de certains ensembles ordonnés. (English summary) [Homology of certain ordered sets] 85k:20150  
 Brown, Kenneth S. (with Geoghegan, Ross)  $FP_\infty$  groups and HNN extensions. 85a:20024  
 (with Geoghegan, Ross) An infinite-dimensional torsion-free  $FP_\infty$  group. 85m:20073  
 Dahaneldae, G. Z. The cohomology of a pair of monoids and homological algebra of inner modules. (Russian. English summary) 85b:20069  
 Fenn, Roger (with Sjerpe, D.) Duality and cohomology for one-relator groups. 85b:20070  
 Geoghegan, Ross See Brown, Kenneth S., 85a:20024 and 85m:20073  
 Horadam, K. J. The cup product and coproduct for a combinatorially aspherical group. 85k:20151  
 Howie, James (with Schneebeli, Hans Rudolf) Homological and topological properties of locally indicable groups. 85c:20041  
 Ikenaga, Bruce M. Homological dimension and Farrell cohomology. 85k:20152  
 Kuz'min, Yu. V. The group of extensions and the functor  $\text{Ext}$  in the variety  $\mathcal{N}$ . (Russian) 85k:20153  
 Certain varieties of free groups. (Russian) 85m:20074  
 Ladra González, M. (with López López, M. P.) Special extensions of crossed modules. (Spanish. English summary) (See 85i:00012)  
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 Majumdar, Subrata Free resolutions for certain classes of groups. 85d:20045  
 Free resolutions for certain classes of groups. 85h:20056  
 Nguyễn Hữu Việt Hùng Algèbre de cohomologie du groupe symétrique infini et classes caractéristiques de Dickson. (English summary) [Cohomology algebra of the infinite symmetric group and Dickson characteristic classes] 85b:20071  
 Parry, Walter R. (with Sah, Chih Han) Third homology of  $SL(2, R)$  made discrete. 85f:20043  
 Phạm Anh Minh Théorie des invariants modulaires et algèbres de cohomologie des  $p$ -groupes extra-spéciaux. (English summary) [Modular invariants of the infinite symmetric group and cohomology algebra of the extra-special  $p$ -groups] 85b:20073  
 Pride, Stephen J. Some finitely presented groups of cohomological dimension two with property (FA). 85c:20042  
 Sah, Chih Han See Parry, Walter R., 85f:20043  
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 Explicit resolutions for the binary polyhedral groups and for other central extensions of the triangle groups. 85d:20046  
 Talelli, Olympia On groups with periodic cohomology after 1 step. 85c:20043

## secondary classifications (20J05)

- Baumslag, Gilbert (with Dyer, E.; Miller, C. F., III) On the integral homology of finitely presented groups. 85g:20044  
 Blanc, P. (with Wigner, D.) Homology of Lie groups and Poincaré duality. 85g:22023  
 Dummit, D. (with Labute, J.) On a new characterization of Demuskin groups. 85k:20087  
 Dupont, Johan L. Algebra of polytopes and homology of flag complexes. 85f:52014  
 Dyer, E. See Baumslag, Gilbert; et al., 85g:20044  
 Gottlieb, Daniel H. Transfers, centers, and group cohomology. 85f:55010  
 Keating, M. E. Whitehead groups of dihedral 2-groups. 85b:18009  
 Labute, J. See Dummit, D., 85k:20087  
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 Pichaud, J.  $G$ -homologie et  $(g, K)$ -homologie dans la catégorie des  $G$ -modules différentiables. [G-homology and  $(g, K)$ -homology in the category of differentiable  $G$ -modules] 85k:22029  
 Rosset, Shmuel A vanishing theorem for Euler characteristics. 85i:55002  
 Rotman, Joseph A remark on integral duality. 85d:20059  
 Wigner, D. See Blanc, P., 85g:22023  
 Yahya, S. M. On a certain isomorphism. 85f:18007

## 20J06 Cohomology of finite groups

- Alsaubaidy, Kahtan Rank 2  $p$ -groups,  $p > 3$ , and Chern classes. 85d:20047  
 Arnold, James E., Jr. Groups of permutation projective dimension two. 85k:20154  
 Cárdenas, Humberto (with Lluís, Emilio) The cohomology algebra of the symmetric group  $S_4$  with integral coefficients. (Spanish) 85h:20067  
 Carlson, Jon F. The cohomology of irreducible modules over  $SL(2, p^n)$ . 85a:20025  
 Diebhel, Thomas On the cohomology of groups of  $p$ -length 1. 85g:20068  
 Huỳnh Mùi See Phạm Anh Minh, 85i:20051  
 Kimmerle, Wolfgang (with Williams, Julian) On minimal relation modules and 1-cohomology of finite groups. 85k:20155  
 Lluís, Emilio See Cárdenas, Humberto, 85h:20067  
 Ogawa, Yoshito On the cohomology of some finite groups of  $p$ -length 1. 85g:20067  
 Phạm Anh Minh (with Huỳnh Mùi) The mod  $p$  cohomology algebra of the group  $M(p^n)$ . 85i:20051  
 Tesuka, Michihige (with Yagita, Nobuaki) The cohomology of subgroups of  $GL_n(F_q)$ . 85g:20068  
 (with Yagita, Nobuaki) The varieties of the mod  $p$  cohomology rings of extra special  $p$ -groups for an odd prime  $p$ . 85g:20069  
 Williams, Julian See Kimmerle, Wolfgang, 85k:20155  
 Yagita, Nobuaki See Tesuka, Michihige, 85g:20068 and 85g:20069

## secondary classifications (20J06)

- Friedlander, Eric Mark (with Parshall, B. J.) On the cohomology of algebraic and related finite groups. 85d:20035  
 Koszulski, Andrzej The Evens-Kahn formula for the total Stiefel-Whitney class. 85h:55007  
 Lluís, Emilio (with Snaith, Victor) On the integral homology of the symmetric group. 85h:55028  
 Meyer, Josef Minimal extensions of finite groups by free abelian groups. 85k:20092  
 Parshall, B. J. See Friedlander, Eric Mark, 85d:20035  
 Snaith, Victor See Lluís, Emilio, 85h:55028  
 Stammach, U. On the principal indecomposables of a modular group algebra. 85h:20015  
 Tavetkov, V. M. On pro- $p$ -groups of cohomology dimension two. (Russian) 85d:12007  
 Vermani, L. R. The Schur's multiplier. (See 85g:00023)

## 20J10 Groups arising as cohomology groups

## secondary classifications (20J10)

- Eda, Katsuya A minimal flabby sheaf and an abelian group. 85d:18007  
 Gérard, Yves Caractérisation des groupes de cohomologie d'un groupe topologique en termes de suites exactes. [Characterization of cohomology groups of a topological group in terms of exact sequences] 85g:22007  
 Miller, Haynes The Sullivan conjecture. 85a:55016  
 Najjar, Rudolph M. Commutative diagrams for the inflation-restriction sequence. 85j:18039

## 20J15 Category of groups

## secondary classifications (20J15)

- Asnar, E. R. (with Bullejos, M.) Shapiro's lemmas. (Spanish. English summary) (See 85i:00012)  
 Bullejos, M. See Asnar, E. R., (85i:00012)  
 Castellet, Manuel Strong automorphisms in nilpotent groups. (Spanish. English summary) 85j:20034  
 Kahn, Peter J. (with Scheerer, H.)  $P$ -universality and fibrewise  $P$ -universality in the category of nilpotent groups. 85d:20032  
 Scheerer, H. See Kahn, Peter J., 85d:20032  
 Vinsonhaler, C. (with Wickless, W. J.) Projective and injective classes of completely decomposable groups. 85d:20053  
 Wickless, W. J. See Vinsonhaler, C., 85d:20053

## 20J99 None of the above, but in this section

## secondary classifications (20J99)

- Carlson, Jon F. The varieties and the cohomology ring of a module. 85a:20004  
 Miyamoto, Masahiko The group  $G_1(RG)$  for a nilpotent group  $G$ . 85b:16024  
 Mukherjee, Amiya On alternative definitions of homology groups. 85g:55010  
 Park, Pyung U. On  $G$ -sets and  $G$ -spaces. (Korean summary) 85d:18002  
 Sherman, Clayton Group representations and algebraic  $K$ -theory. 85e:18010  
 Thomas, C. B. Filtrations on the representation ring of a finite group. 85d:55025  
 Ulbrich, Karl-Heinz Kohärenz in Kategorien mit Gruppenstruktur. II. [Coherence in categories with group structure. II] 85a:18013

## 20Kxx Abelian groups

## 20K01 Finite abelian groups

- Beers, D. (with Hunter, Roger H.; Walker, E.) Finite valued  $p$ -groups. 85d:20048  
 Hunter, Roger H. See Beers, D.; et al., 85d:20048  
 Khabbas, Samir A. (with Rayna, Gerhard) A basis theorem for subgroups of finite abelian groups. 85d:20049  
 MacCluer, C. R. A simple proof of the fundamental theorem on finite abelian groups. 85b:20073  
 Rayna, Gerhard See Khabbas, Samir A., 85d:20049  
 Véles, William Ylas The notion of neatness in torsion abelian groups of finite rank. 85g:20070  
 Walker, E. See Beers, D.; et al., 85d:20048

## secondary classifications (20K01)

- Guo, Yuan Chun On a theorem of Szász. (Chinese. English summary) **85k:20078**  
 Jassim, S. A. Finite abelian surface coverings. **85m:57034**  
 Krätzel, Ekkehard Die Wertverteilung der Anzahl der nicht-isomorphen abelschen Gruppen endlicher Ordnung und ein verwandtes zahlentheoretisches Problem. [The value distribution of the number of nonisomorphic abelian groups of finite order and a related number-theoretic problem] **85e:11072**  
 Szabó, Sándor Noninteger lattice tilings by  $(k, n)$  truncated crosses. **85g:11050**

## 20K05 Finitely generated groups

## secondary classifications (20K05)

- Zaks, Abraham On a problem of Kaplansky. II. Every finitely generated abelian group is the restricted Grothendieck group of a local, Noetherian, Krull domain. **85c:13011**

## 20K10 Torsion groups, primary groups and generalized primary groups

- Benabdallah, Khalid (with Honda, Kin-ya) Straight bases of abelian  $p$ -groups. **85c:20044**  
 (with Laroche, A.) Primary groups whose basic subgroup decompositions can be lifted. **85d:20050**  
 Cutler, Doyle Pure dense subgroups that are isomorphic to every pure subgroup supported by their socles. **85d:20051**  
 (with Irwin, John; Pfandtner, James; Snabb, Tom)  $p^{u+n}$ -projective abelian  $p$ -groups having big direct sum of cyclic summands. **85b:20058**  
 High subgroups of primary abelian groups of length  $\omega + n$ . **85e:20038**  
 (with Misael, Colin) The structure of  $C$ -decomposable  $p^{u+n}$ -projective abelian  $p$ -groups. **85k:20156**  
 (with Irwin, John; Snabb, Tom) Abelian  $p$ -groups containing proper  $p^{u+n}$ -projective subgroups. **85k:20157**  
 Eklof, Paul C. (with Mekler, Alan H.) On endomorphism rings of  $\omega_1$ -separable primary groups. **85i:20052**  
 Hill, Paul (with Megibben, Charles) On the congruence of subgroups of totally projectives. **85e:20039**  
 Balanced subgroups of totally projective groups. **85i:20053**  
 Honda, Kin-ya See Benabdallah, Khalid, **85c:20044**  
 Huber, Martin Methods of set theory and the abundance of separable abelian  $p$ -groups. **85h:20059**  
 Irwin, John See Cutler, Doyle; et al. **85b:20058** and **85k:20157**  
 Keef, Patrick W. On the endomorphic images of  $C_\lambda$ -groups. **85k:20158**  
 Laroche, A. See Benabdallah, Khalid, **85d:20050**  
 Liebert, Wolfgang Endomorphism rings of abelian  $p$ -groups. **85b:20074**  
 Megibben, Charles Totally Zippin  $p$ -groups. **85h:20060**  
 See also Hill, Paul, **85e:20039**  
 Mekler, Alan H. See Eklof, Paul C., **85i:20052**  
 Miranda, Rick Nondegenerate symmetric bilinear forms on finite abelian 2-groups. **85m:20075**  
 Misael, Colin See Cutler, Doyle, **85k:20156**  
 Pfandtner, James See Cutler, Doyle; et al. **85b:20058**  
 Snabb, Tom See Cutler, Doyle; et al. **85b:20058** and **85k:20157**  
 Vergosen, C. René Extensions of torsion complete groups. **85g:20071**  
 Wick, Brian D. The calculation of an invariant for Tor. **85i:20054**

## secondary classifications (20K10)

- Beers, D. (with Hunter, Roger H.; Walker, E.) Finite valued  $p$ -groups. **85d:20048**  
 Benabdallah, Khalid (with Singh, Surjeet) On torsion abelian groups like modules. **85a:16030**  
 Cutler, Doyle Abelian  $p$ -groups  $A$  and  $B$  such that  $\text{Tor}(A, G) \cong \text{Tor}(B, G)$ ,  $G$  reduced. **85i:20059**  
 Fuchs, L. (with Salce, L.) Separable torsion modules over valuation domains. **85e:13016**  
 Hunter, Roger H. See Beers, D.; et al. **85d:20048**  
 Khabbas, Samir A. (with Rayna, Gerhard) A basis theorem for subgroups of finite abelian groups. **85d:20049**  
 Khisamiev, N. G. Strongly constructive abelian  $p$ -groups. (Russian) **85e:03105**  
 Rayna, Gerhard See Khabbas, Samir A., **85d:20049**  
 Salce, L. See Fuchs, L., **85e:13016**  
 Singh, Surjeet See Benabdallah, Khalid, **85a:16030**  
 Walker, E. See Beers, D.; et al. **85d:20048**

## 20K15 Torsion free groups, finite rank

- Arnold, David M. (with Vinsonhaler, C.) Pure subgroups of finite rank completely decomposable groups. II. **85g:20072**  
 Bican, Ladislav Factor-splitting length of torsionfree abelian groups of rank two. **85m:20076**  
 Blagoveshchenskaya, E. A. Direct decompositions of finite rank torsion-free abelian groups. (Russian) **85f:20044**  
 Gasparini, Emanuela (with Metelli, Claudia) On projectivities of abelian groups of torsionfree rank one. (Italian summary) **85m:20077**  
 Lausch, Huberta Tensorprodukte zweier torsionsfreier Abelscher Gruppen des Ranges zwei. [Tensor products of two torsion-free abelian groups of rank two] **85g:20073**  
 Metelli, Claudia See Gasparini, Emanuela, **85m:20077**  
 Mutsbauer, Otto Type graph. **85d:20052**  
 Nongxa, Loyiso G. Homogeneous subgroups of completely decomposable groups. **85m:20078**  
 An indecomposable balanced subgroup of a finite rank completely decomposable group. **85k:20159**  
 A note on homogeneous torsion-free abelian groups. **85m:20079**  
 Vinsonhaler, C. (with Wickless, W. J.) Projective and injective classes of completely decomposable groups. **85d:20053**

(with Wickless, W. J.)  $G$ -projective groups. **85k:20160**

See also Arnold, David M., **85g:20072**

Wickless, W. J. See Vinsonhaler, C., **85d:20053** and **85k:20160**

Zhang, Ying Bo The structure of a class of rank 2 torsion-free abelian groups. (Chinese) (Not in MR)

## secondary classifications (20K15)

- Dzgoev, V. D. Constructivizations of direct products of algebraic systems. (Russian) **85b:03076**  
 Lady, E. L. A seminar on splitting rings for torsion free modules over Dedekind domains. **85f:13007**  
 Pierce, R. S. (with Vinsonhaler, C.) Realizing central division algebras. **85h:16019**  
 Reid, J. D. Abelian groups cyclic over their endomorphism rings. **85e:16053**  
 Vinsonhaler, C. See Pierce, R. S., **85h:16019**

## 20K20 Torsion free groups, infinite rank

- Bican, Ladislav A remark on hyperindecomposable groups. (Italian summary) **85h:20061**  
 Birts, Alain Sur des décompositions directes paradoxales de groupes abéliens sans torsion. [On paradoxal direct decompositions of torsion-free abelian groups] **85h:20062**  
 Dugas, Manfred (with Göbel, Rüdiger) Torsion-free abelian groups with prescribed finitely topologized endomorphism rings. **85i:20055**  
 Eds, Katsuya  $Z$ -kernel groups of measurable cardinalities. **85g:20074**  
 Göbel, Rüdiger See Dugas, Manfred, **85i:20055**  
 Goldsmith, B. An essentially semirigid class of modules. **85j:20052**  
 Lawrence, John W. Countable abelian groups with a discrete norm are free. **85i:20056**  
 Metelli, Claudia On type-related properties of torsion-free abelian groups. **85b:20075**  
 Rangaswamy, K. M. On strongly balanced subgroups of separable torsion-free abelian groups. **85d:20034**  
 The theory of separable mixed abelian groups. **85h:20063**

## secondary classifications (20K20)

- Cherlin, G. (with Schmitt, Peter H.) Locally pure topological abelian groups: elementary invariants. **85a:03050**  
 Corner, A. L. S. On the existence of very decomposable abelian groups. **85g:20076**  
 Dzgoev, V. D. Constructivizations of direct products of algebraic systems. (Russian) **85b:03076**  
 Eckert, Ernest J. The group of primitive Pythagorean triangles. **85a:51017**  
 Nongxa, Loyiso G. Homogeneous subgroups of completely decomposable groups. **85m:20078**  
 A note on homogeneous torsion-free abelian groups. **85m:20079**  
 Schmitt, Peter H. See Cherlin, G., **85a:03050**

## 20K21 Mixed groups

- Cutler, Doyle (with Irwin, John; Pfandtner, James; Snabb, Tom) Direct sums of cyclic summands. **85b:20076**  
 Feigelstock, Shalom A note on subdirectly irreducible rings. **85h:20064**  
 Hill, Paul Toward the classification of mixed groups. **85g:20075**  
 Irwin, John See Cutler, Doyle; et al., **85b:20076**  
 Joubert, S. V. (with Ohlhoff, H. J. K.; Schoeman, M. J.) Characterizations of quasipartitioning abelian groups. **85d:20055**  
 Ohlhoff, H. J. K. See Joubert, S. V.; et al., **85d:20055**  
 Pfandtner, James See Cutler, Doyle; et al., **85b:20076**  
 Richman, Fred Nice subgroups of mixed local groups. **85b:20077**  
 Schoeman, M. J. See Joubert, S. V.; et al., **85d:20055**  
 Snabb, Tom See Cutler, Doyle; et al., **85b:20076**

## secondary classifications (20K21)

- Bican, Ladislav Factor-splitting length of torsionfree abelian groups of rank two. **85m:20076**  
 Masohhood, Asif Note on neat-high extensions. **85c:20047**  
 Rangaswamy, K. M. The theory of separable mixed abelian groups. **85h:20063**  
 Separable abelian groups as modules over their endomorphism rings. **85m:20062**

## 20K25 Direct sums, direct products, etc.

- Beers, D. (with Richman, Fred; Walker, E.) Group algebras of abelian groups. **85e:20040**  
 Corner, A. L. S. On the existence of very decomposable abelian groups. **85g:20076**  
 Eds, Katsuya A Boolean power and a direct product of abelian groups. **85b:20078**  
 A note on subgroups of  $Z^N$ . **85h:20065**  
 On  $Z$ -kernel groups. **85m:20080**  
 Almost-slender groups and Fuchs-44 groups. **85d:20056**  
 (with Hibino, Ken-ichi) On Boolean powers of the group  $Z$  and  $(\omega, \omega)$ -weak distributivity. **85m:20081**  
 Hibino, Ken-ichi See Eds, Katsuya, **85m:20081**  
 Hill, Paul The classification of  $N$ -groups. **85k:20161**  
 Ivanov, A. M. Necessary conditions for cotorsion of the quotient group of a direct product of abelian groups. (Russian) **85h:20066**  
 Koshukhov, S. F. A class of almost completely decomposable torsion-free abelian groups. (Russian) **85f:20045**  
 O'Neill, John D. On summands of direct products of abelian groups. **85k:20162**  
 On direct products of modules. **85f:20046**  
 Richman, Fred See Beers, D.; et al., **85e:20040**  
 Wald, Burkhard On  $\kappa$ -products modulo  $\mu$ -products. **85c:20045**  
 Walker, E. See Beers, D.; et al., **85e:20040**

## secondary classifications (20K25)

- Baudisch, Andreas Tensor products of modules and elementary equivalence. 85j:03048  
 Benabdallah, Khalid (with Laroche, A.) Primary groups whose basic subgroup decompositions can be lifted. 85d:20050  
 Birtz, Alain Sur des décompositions directes paradoxales de groupes abéliens sans torsion. [On paradoxal direct decompositions of torsion-free abelian groups] 85h:20003  
 Blagoveshchenskaya, E. A. Direct decompositions of finite rank torsion-free abelian groups. (Russian) 85f:20044  
 Cutler, Doyle (with Irwin, John; Pfandtner, James; Snabb, Tom) Direct sums of cyclic summands. 85b:20078  
 Huber, Martin On reflexive modules and abelian groups. 85f:10032  
 Irwin, John See Cutler, Doyle; et al., 85b:20078  
 Laroche, A. See Benabdallah, Khalid, 85d:20050  
 Megibben, Charles Totally Zippin  $p$ -groups. 85h:20060  
 Mekler, Alan H. Proper forcing and abelian groups. 85h:03053  
 Pfandtner, James See Cutler, Doyle; et al., 85b:20078  
 Rychkov, S. V. Extensions of modules. (Russian) 85h:10027  
 Snabb, Tom See Cutler, Doyle; et al., 85b:20078

## 20K26 Indecomposable groups

## secondary classifications (20K26)

- Bican, Ladislav A remark on hyperindecomposable groups. (Italian summary) 85h:20061

## 20K27 Subgroups

- Bečvář, Jindřich A note on  $H$ -high subgroups of abelian groups. 85i:20057  
 Chen, Zhong Mu A theorem on abelian groups with finite exponent. (Chinese. English summary) 85f:20047  
 Göbel, Rüdiger (with Vergosen, R.) Intersections of pure subgroups of valued abelian groups. 85e:20041  
 Hanna, A. (with Shamsuddin, A.) On the structure of certain types of abelian groups. 85e:20046  
 Maksimov, S. Yu. Isomorphic near-requirements of certain direct decompositions of abelian groups. (Russian) 85f:20048  
 Maschood, Anif Note on near-high extensions. 85e:20047  
 Shamsuddin, A. See Hanna, A., 85e:20046  
 Vergosen, R. See Göbel, Rüdiger, 85e:20041

## secondary classifications (20K27)

- Cutler, Doyle Pure dense subgroups that are isomorphic to every pure subgroup supported by their socles. 85d:20051  
 (with Irwin, John; Pfandtner, James; Snabb, Tom) Direct sums of cyclic summands. 85b:20078  
 High subgroups of primary abelian groups of length  $\omega + n$ . 85e:20038  
 (with Irwin, John; Snabb, Tom) Abelian  $p$ -groups containing proper  $p^{\omega+n}$ -projective subgroups. 85h:20157  
 Hill, Paul Balanced subgroups of totally projective groups. 85i:20053  
 Irwin, John See Cutler, Doyle; et al., 85b:20078 and 85h:20157  
 Joubert, S. V. (with Schoeman, M. J.) Superhonesty for modules and abelian groups. 85m:16012  
 Pfandtner, James See Cutler, Doyle; et al., 85b:20078  
 Schoeman, M. J. See Joubert, S. V., 85m:16012  
 Snabb, Tom See Cutler, Doyle; et al., 85b:20078 and 85h:20157

## 20K30 Automorphisms, homomorphisms, endomorphisms, etc.

- Göbel, Rüdiger Endomorphism rings of abelian groups. 85d:20057  
 Hausen, Jutta Abelian groups which are uniserial as modules over their endomorphism rings. 85c:20048  
 Rangaswamy, K. M. Separable abelian groups as modules over their endomorphism rings. 85m:20062  
 Ren, Yong Cai On a theorem about complete groups and its generalization. (Chinese. English summary) 85g:20077  
 Rosen, Michael I. (with Shisha, Oved) Rings all of whose additive endomorphisms are left multiplications. 85k:20163  
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## secondary classifications (20K30)

- Dugas, Manfred (with Göbel, Rüdiger) Endomorphism algebras of torsion modules. II. 85f:13009  
 (with Göbel, Rüdiger) Torsion-free abelian groups with prescribed finitely topologized endomorphism rings. 85i:20055  
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 Hill, Paul (with Megibben, Charles) On the congruence of subgroups of totally projectives. 85e:20039  
 Keef, Patrick W. On the endomorphic images of  $C_\lambda$ -groups. 85k:20158  
 Megibben, Charles See Hill, Paul, 85e:20039

## 20K35 Extensions

- Halle, G. About the connection between the neutrix theory and a remarkable construction in mathematical analysis. (Romanian summary) 85i:20058

## secondary classifications (20K35)

- Megibben, Charles Totally Zippin  $p$ -groups. 85h:20060

## 20K40 Homological and categorical methods

- Allsade, R. G. Global dimensions of inductively closed proper classes in the category of abelian groups. (Russian. English and Azerbaijani summaries) 85f:20049  
 Cutler, Doyle Abelian  $p$ -groups  $A$  and  $B$  such that  $\text{Tor}(A, G) \cong \text{Tor}(B, G)$ ,  $G$  reduced. 85i:20059  
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 Kolettis, G. Abelian group theory and  $p$ -maps. 85d:20058  
 Rotman, Joseph A remark on integral duality. 85d:20059

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- Harting, Roewitha Abelian groups in a topos: injectives and injective effacements. 85h:18002  
 Hernández Paricio, Luis Javier Dual homotopy groups of abelian groups. (Spanish. English summary) 85a:55012  
 Höpner, Michael ★ Diagramme über geordneten Mengen und einige Analogien zur Theorie abelscher Gruppen. (German) [Diagrams over ordered sets and some analogies to the theory of abelian groups] 85c:18002  
 Joubert, S. V. (with Ohlhoff, H. J. K.; Schoeman, M. J.) Characterizations of quasisplitting abelian groups. 85d:20055  
 Megibben, Charles Totally Zippin  $p$ -groups. 85h:20060  
 Mines, Ray Completions of valued abelian groups. 85i:20060  
 Ohlhoff, H. J. K. See Joubert, S. V.; et al., 85d:20055  
 Schoeman, M. J. See Joubert, S. V.; et al., 85d:20055  
 Vinsonhaler, C. (with Wickless, W. J.)  $G$ -projective groups. 85k:20160  
 Wick, Brian D. The calculation of an invariant for  $\text{Tor}$ . 85i:20054  
 Wickless, W. J. See Vinsonhaler, C., 85k:20160

## 20K45 Topological methods

- Abouabdillah, Driass Topologies linéaires minimales sur un groupe abélien. [Minimal linear topologies on an abelian group] 85d:20060  
 Mines, Ray Completions of valued abelian groups. 85i:20060

## secondary classifications (20K45)

- Göbel, Rüdiger Endomorphism rings of abelian groups. 85d:20057  
 Lawrence, John W. Countable abelian groups with a discrete norm are free. 85i:20056  
 Mader, A. Completions via duality. 85i:16053  
 O'Neill, John D. On summands of direct products of abelian groups. 85k:20162  
 Venkataraman, Rangachari Coproduct in the category of groups satisfying Pontryagin duality. 85j:20004

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- Bečvář, Jindřich Abelian groups in which every  $\Gamma$ -isotype subgroup is an intersection of  $\Gamma^*$ -isotype subgroups. 85d:20061  
 Dobritsa, V. P. Some constructivizations of abelian groups. (Russian) 85d:20062  
 Fay, T. H. (with Oxford, E. P.; Walls, Gary L.) Preradicals induced by homomorphisms. 85j:20053a  
 (with Oxford, E. P.; Walls, Gary L.) Singly generated socles and radicals. 85j:20053b  
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 Gorbachuk, O. L. (with Yurchishin, R. I.) Decomposability and description of radicals in abelian groups. (Ukrainian. Russian summary) 85g:20078  
 Hausen, Jutta The additive group of rings with totally ordered ideal lattices. 85i:20061  
 Separable and coseparable modules over Dedekind domains. 85e:20043  
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 Walls, Gary L. See Fay, T. H.; et al., 85j:20053a and 85j:20053b  
 Yurchishin, R. I. See Gorbachuk, O. L., 85g:20078

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- Bachurin, G. F. Schur multipliers of abelian groups. (Russian) 85h:20016  
 Baudisch, Andreas Corrections and supplements to: "Decidability of the theory of abelian groups with Ramsey quantifiers" [Bull. Acad. Polon. Sci. Sér. Sci. Math. Astronom. Phys. 25 (1977), no. 8, 733-739; MR 58 #21556]. (Russian summary) 85j:03011  
 Chen, Chuan Chong (with Quimpo, N.) Hamiltonian Cayley graphs of order  $pq$ . 85e:05090  
 Durnberger, Erich Connected Cayley graphs of semidirect products of cyclic groups of prime order by abelian groups are Hamiltonian. 85h:05065  
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 Hales, A. W. Augmentation terminals of finite abelian groups. 85e:16015  
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 Hausen, Jutta Abelian groups which are uniserial as modules over their endomorphism rings. 85c:20048  
 Hickerson, Dean Splittings of finite groups. 85e:20023  
 Hill, Paul An isomorphism theorem for valued vector spaces. 85a:18008  
 Hodges, Wilfred Errata to: "In singular cardinality, locally free algebras are free" [Algebra Universalis 12 (1981), no. 2, 205-220; MR 82i:08005]. 85e:08015  
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 Quimpo, N. See Chen, Chuan Chong, 85e:05090



- Schmidt, Adam Zur "Differentialgleichung"  $(\partial/\partial y)S = T$  im Bereich der Distributionen. (English, French and Russian summaries) [On the "differential equation"  $(\partial/\partial y)S = T$  in the domain of distributions] (Not in MR)
- Schmitt, Peter H. The  $L^1$ -theory of profinite abelian groups. 85j:03049
- Shamsuddin, A. See Hanna, A., 85c:20046
- Taylor, Mark Adrian On a problem of Krapeš. (See 85i:20005)

## 20Lxx Groupoids (small categories in which all morphisms are isomorphisms)

### 20L05 General theory

- Corsini, Piergiulio On a theorem of R. H. Bruck. (Italian. English summary) 85k:20164
- Ješek, Jaroslav (with Kepka, T.) Notes on distributive groupoids. 85b:20081  
(with Kepka, T.) Torsion groupoids. 85a:20028  
(with Kepka, T.) Medial groupoids. (Russian summary) 85k:20185  
(with Kepka, T.) Permutable groupoids. 85k:20166  
(with Kepka, T.) Modular groupoids. 85k:20167
- Kepka, T. One-element extensions of distributive groupoids. (Russian and Czech summaries) 85k:20168
- See also Ješek, Jaroslav. 85a:20026; 85b:20081; 85k:20165; 85k:20166 and 85k:20097
- Klukovits, L. On the independence of the medality conditions. 85d:20083
- Wardlaw, William P. Finitely associative groupoids and algebras. 85e:20044

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- Abraham, Imrich Prime ideals in groupoids and multiplicative semigroups of residue classes (mod  $m$ ). (Russian) 85g:20088
- Batbedat, André (with Reilly, Norman R.) Groupoids, unary and biunary semigroups. 85b:20094
- Both, N. See Purdea, I., 85e:04003
- Ješek, Jaroslav (with Kepka, T.) Idealfree CIM-groupoids and open convex sets. 85b:20097  
(with Kepka, T.) Equational theories of medial groupoids. 85m:08011
- Johnson, Kenneth Walter See Sharma, Bhagirath Lal, 85j:20076
- Kepka, T. See Ješek, Jaroslav. 85b:20097 and 85m:08011
- Markovski, Smile  $n$ -subgroupoids of cancellative groupoids. (Macedonian summary) 85g:20097
- Pionka, Jerzy Subdirectly irreducible groupoids in some varieties. 85f:08004
- Purdea, I. (with Both, N.) On the  $n$ -transitivity of relations and transitive elements. 85e:04003
- Reilly, Norman R. See Batbedat, André, 85b:20094
- Sharma, Bhagirath Lal (with Johnson, Kenneth Walter) Loops and groupoids. (Italian summary) 85j:20076

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- Brown, Ronald (with Heath, Philip R.; Kamps, Klaus Heiner) Groupoids and the Mayer-Vietoris sequence. 85j:55007
- Heath, Philip R. See Brown, Ronald; et al., 85j:55007
- Kamps, Klaus Heiner See Brown, Ronald; et al., 85j:55007

### 20L17 Connections with category theory

#### secondary classifications (20L17)

- Adámek, J. (with Merzenich, Wolfgang) Fixed points as equations and solutions. 85i:18011
- Merzenich, Wolfgang See Adámek, J., 85i:18011

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#### secondary classifications (20L99)

- Birkenmeier, G. F. Exponentiation without associativity. (Russian and Czech summaries) 85e:04001
- Konstantinidou-Serafimidou, Maria On the hyperlattices-ordered groupoids. (Italian summary) 85a:06029
- Szász, Gábor Remarks on interior ideals of semigroups. (Not in MR)

## 20Mxx Semigroups

#### secondary classifications (20Mxx)

- (Migliorini, Franco) See Proceedings: Conference on the theory of semigroups, 85g:20003
- Petrich, Mario ★ Inverse semigroups. 85k:20001
- Conference:  
Theory of semigroups ★ Atti del convegno di teoria dei semigrupp. (Italian) [Proceedings of the conference on the theory of semigroups] 85g:20003
- Proceedings:  
Conference on the theory of semigroups ★ Atti del convegno di teoria dei semigrupp. (Italian) [Proceedings of the conference on the theory of semigroups] 85g:20003
- Siena ★ Atti del convegno di teoria dei semigrupp. (Italian) [Proceedings of the conference on the theory of semigroups] 85g:20003

## 20M05 Free semigroups, generators and relations, word problem

- Belyaev, V. Ya. Imbeddability of recursively defined inverse semigroups in finitely presented semigroups. (Russian) 85m:20083
- Book, Ronald V. (with Squier, C.) Almost all one-rule Thue systems have decidable word problems. 85e:20045
- Eberhart, Carl (with Williams, Wiley) Elementary orthodox semigroups. 85k:20169
- Gurevich, Yuri (with Lewis, Harry R.) The word problem for cancellation semigroups with zero. 85k:20170
- Harju, Tero On finitely based dominions in semigroups. 85j:20084
- Jones, P. R. Free products of inverse semigroups. 85h:20067
- Karhumäki, Juhani A note on intersections of free submonoids of a free monoid. 85m:20084
- Kolesnikova, T. L. Semigroups that can be defined by relations of left annihilation. (Russian) 85f:20050
- Lewis, Harry R. See Gurevich, Yuri, 85k:20170
- Makar-Limanov, Leonid On free subsemigroups. 85i:20062
- Nordahl, T. Finitely generated left commutative semigroups are residually finite. 85k:20171
- Oganesyan, G. U. The isomorphism problem for semigroups with one defining relation. (Russian) 85m:20085
- Paradis, A. D. (with Thierrin, G.) Languages of primitive words associated with sets of natural numbers. 85k:20172
- Pécuchet, J.-P. Solutions principales et rang d'un système d'équations avec constantes dans le monoïde libre. (English summary) [Principal solutions and rank of a system of equations with constants in the free monoid] 85e:20046
- Pirillo, G. On a theorem of van der Waerden. (Italian) 85m:20086
- Rosenblatt, B. V. Equations on a free inverse semigroup. (Russian) 85d:20064
- Rumyantsev, Yu. A minimal example of a semigroup with cancellation which is not imbeddable in a group. (Russian) 85g:20079
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- Squier, C. (with Wrathall, C.) The Freiheitssatz for one-relation monoids. 85e:20049
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- Williams, Wiley See Eberhart, Carl, 85k:20169
- Wrathall, C. See Squier, C., 85e:20049

#### secondary classifications (20M05)

- Adyan, S. I. (with Makanin, G. S.) Studies in algorithmic questions of algebra. (Russian) 85k:20109
- Carbonne, P. Cohomologie des semi-groupes d'entiers. [Cohomology of integral semigroups] 85d:20082
- Forys, Wit A fixed point characterization of cofinite languages. 85h:68031
- Gurevich, Yuri (with Lewis, Harry R.) The inference problem for template dependencies. 85e:68013
- Gurso, G. G. Systems of generators for normalizers of certain elements of a braid group. (Russian) 85k:20125
- Higgins, Peter M. Saturated and epimorphically closed varieties of semigroups. 85f:20052
- Karhumäki, Juhani A note on intersections of free submonoids of a free monoid. 85g:68035
- Kublanovskii, S. I. Finite approximability and algorithmic questions. (Russian) 85m:20088
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- Makar-Limanov, Leonid On free subsemigroups of skew fields. 85j:16022
- Novikov, B. V. A counterexample to a conjecture of Mitchell. (Russian. English summary) 85e:18013
- Perrin, Dominique Variétés de semigroupes et mots infinis. [Semigroup varieties and infinite words] 85f:68046
- Restivo, Antonio (with Reutenauer, Christophe) On the Burnside problem for semigroups. 85k:20188
- Reutenauer, Christophe See Restivo, Antonio, 85k:20188
- Shih, Hui Jan A characterization of dense languages. 85h:68038
- Vasilenin, Yu. M. Inverse codes. (Russian) 85i:94024

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- Almeida, J. (with Reilly, Norman R.) Generalized varieties of commutative and nilpotent semigroups. 85m:20087
- Golubov, E. A. (with Sapir, M. V.) Varieties of finitely approximable semigroups. (Russian) 85f:20051
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- Johnston, K. G. Subalgebra lattices of completely simple semigroups. 85i:20063
- Jones, P. R. On the lattice of varieties of completely regular semigroups. 85b:20082
- Koubek, V. (with Sichler, J.) Universal varieties of semigroups. 85b:20083
- Kublanovskii, S. I. Finite approximability and algorithmic questions. (Russian) 85m:20088
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- Margolis, Stuart W. (with Pin, J.-E.) Minimal noncommutative varieties and power varieties. 85i:20064

- (with Pin, J.-E.) Power monoids and finite  $J$ -trivial monoids. 85f:20063
- Martynova, T. A. The largest groupoid of varieties of semigroups with zero. (Russian) 85g:20060
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- Mashevitzkiĭ, G. I. Bases of identities of certain varieties of completely simple semigroups. (Russian) 85f:20054
- Example of a finite semigroup that does not have an irreducible basis of identities in the class of completely 0-simple semigroups. (Russian) 85a:20027
- McKenzie, Ralph A note on residually small varieties of semigroups. 85e:20048
- Petrich, Mario (with Reilly, Norman R.)  $E$ -unitary covers and varieties of inverse semigroups. 85i:20065
- (with Reilly, Norman R.) All varieties of central completely simple semigroups. 85e:20050
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- Saitô, Tōru Varieties of bands and the orderability. 85d:20065
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- Wilkinson, Ross Verbal varieties of inverse semigroups. 85m:20090
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- Kalajdžievski, S. Subalgebras of distributive and commutative semigroups. (Macedonian summary) 85h:09014
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- Pastijn, F. J. Constructions of varieties that satisfy the amalgamation property or the congruence extension property. 85k:20069
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- Alimpiri, Branka P. Certain idempotent separating congruences on orthodox semigroups. 85j:20065
- Allen, Paul (with Dale, Louis; Edwards, Shirley) Direct products of operator semigroups. 85f:20066
- Alvarez, Estrella Semimodule actions of a monoid on a band. (Spanish. French summary) (Not in MR)
- Armstrong, S. The structure of type A semigroups. 85k:20174
- Bandelt, Hans-J. On regularity classes of binary relations. 85h:20070
- Baranashvili, V. A. Independence of groups of automorphisms and lattices of ideals of semigroups. (Russian) 85e:20050
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- Dudek, Wiesław A. Remarks on  $(m, n)$ -mutants. 85b:20084a
- On  $(m, n)$ -antimutants in semigroups. 85b:20084b
- Easdown, David Biordered sets are biordered subsets of idempotents of semigroups. 85i:20067
- A new proof that regular biordered sets come from regular semigroups. 85k:20177
- Edwards, P. M. Eventually regular semigroups. 85h:20065
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- Hall, T. E. (with Jones, P. R.) Epis are onto for finite regular semigroups. 85b:20067
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- Koch, R. J. (with Madison, B. L.) Congruences under  $\mathcal{L}$  on regular semigroups. 85d:20069
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- Kumaresan, K. A note on idempotent separating congruences on a regular semigroup. 85i:20069a
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- Lajos, S. Characterizations of (left) groups. (See 85i:20003)
- LaTorre, D. R. The least semilattice of groups congruence on a regular semigroup. 85a:20030
- Leemans, H. (with Pastijn, F. J.) Embedding inverse semigroups in bisimple congruence-free inverse semigroups. 85h:20075
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- Madison, B. L. See Koch, R. J., 85d:20069
- Magill, K. D., Jr. (with Misra, P. R.; Tewari, U. B.) Symons'  $d$ -congruence on sandwich semigroups. 85g:20085
- McAllister, D. B. (with McFadden, R. B.) Regular semigroups with inverse transversals. 85f:20062
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- Koubek, V.** See **Janiga, Ladislav**, **85f:68045**  
**Latteux, M.** See **Beauquier, J.**, **(85k:68007)**  
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**Lisovik, L. P.** Minimal undecidable identity problem for finite-automaton mappings. **85f:68026**  
**Margolis, Stuart W.** (with Pin, J.-E.) Minimal noncommutative varieties and power varieties. **85i:20064**  
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**Nakamura, Akira** See **Watanabe, Toshimasa**, **85c:68056**  
**Paradis, A. D.** (with Thierrin, G.) Languages of primitive words associated with sets of natural numbers. **85k:20172**  
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**Pin, J.-E.** Semigroupes des parties et relations de Green. [The semigroup of subsets and the Green relations] **85k:20187**  
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**Pirillo, G.** On a theorem of van der Waerden. (Italian) **85m:20086**  
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- Batbedat, André** (with Reilly, Norman R.) Groupoids, unary and biunary semigroups. **85b:20094**  
**Bulman-Fleming, S.** (with McDowell, K.) Flatness and amalgamation in semigroups. **85k:20198**  
**Carbonne, P.** Cohomologie des semi-groupes d'entiers. [Cohomology of integral semigroups] **85d:20082**  
**Goseki, Zensiro** Semigroups of right quotients of a semigroup which is a semilattice of right groups. **85h:20084**  
**Heblach, U.** On right quotient filters of semigroups. **85b:20095**  
**McDowell, K.** See **Bulman-Fleming, S.**, **85k:20198**  
**Novikov, B. V.** On partial cohomologies of semigroups. **85f:20070**  
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**Dzhanelidze, G. Z.** The cohomology of a pair of monoids and homological algebra of inner modules. (Russian. English summary) **85b:20069**  
**Huq, S. A.** Generalized epimorphism, monomorphism and bimorphism properties of categories. **85f:18001**  
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- 20M99** None of the above, but in this section
- Bogdanović, Stojan** On a problem of J. D. Kečič concerning semigroup functional equations. (See **85i:20005**)  
**Cohen, Haskell** (with Koch, R. J.; Lawson, Jimmie D.) Semigroups defined by lattice polynomials. **85c:20062**  
**De Bodi, Ann** (with Satyanarayana, M.) On semigroups admitting ring structure. III. (Russian and Czech summaries) **85k:20199**  
**Koch, R. J.** See **Cohen, Haskell**; et al., **85c:20062**  
**Krishnan, V. S.** Semigroups with s.m.f. structures. **85b:20085**  
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**Letizia, A.** Cryptofactorial  $S$ -sets. (Italian. English summary) **85i:20075**  
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**Ješek, Jaroslav** (with Kepka, T.) Simple semimodules over commutative semirings. **85e:16065**  
**Johnson, Johnny A.** (with Moss, Kenneth V.) Bijections and homomorphisms. **85h:06016**  
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**Li, Li De** (with Schein, B. M.) Ordered sets which support inverse semigroups: three examples. **85m:06033**  
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**Schwarz, Stefan** Extensions of Bauer's identical congruences. (Russian summary) **85c:11003**  
**Tichý, Robert F.** Über den Kongruenzrelationenverband der Algebra der Polynomfunktionen einer Halbgruppe. (English summary) [On the lattice of congruence relations of the algebra of polynomial functions of a semigroup] **85b:08003**

## 20Nxx Other generalizations of groups

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- (Čupona, G.) See **Proceedings: Symposium on  $n$ -ary structures**, **85i:20005**  
 (Popov, Blagoj) See **Proceedings: Symposium on  $n$ -ary structures**, **85i:20005**  
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**Proceedings:**  
**Symposium on  $n$ -ary structures** ★ **Proceedings of the symposium on  $n$ -ary structures**. **85i:20005**  
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## 20N05 Loops, quasigroups [See also 05Bxx.]

- Agrawal, R. C.** On some postulates for quasigroups. **85a:20032**  
**Belyavskaya, G. B.** Partially orthogonal quasigroups and systems of quasigroups. (Russian) **85h:20087**  
**Bénéteau, Lucien** Quelques conséquences de la locale nilpotence des boucles de Moufang commutatives. (English summary) [Some consequences of the local nilpotency of commutative Moufang loops] **85b:20096**  
 3-abelian groups and commutative Moufang loops. **85m:20099**  
**Chaffer, Robert A.** (with Lieberman, Debra J.; Smith, Douglas D.) The number of orthogonal conjugates of a quasigroup. **85e:20061**  
**Colaps, G.** Medial quasigroups with a left unit. (Italian. English summary) **85g:20095**  
**Goodaire, Edgar G.** Alternative loop rings. **85k:20200**  
**Hoffman, D. G.** On the spectrum of  $n$ -quasigroups with given conjugate invariant subgroup. **85a:20033**  
**Ihringer, Thomas** On multiplication groups of quasigroups. **85k:20201**  
**Ješek, Jaroslav** (with Kepka, T.) Ideal-free CIM-groupoids and open convex sets. **85b:20097**  
**Johnson, Kenneth Walter** (with Smith, J. D. H.) Characters of finite quasigroups. **85k:20202**  
 See also **Sharma, Bhagirath Lal**, **85j:20076**  
**Keedwell, A. D.** The existence of pathological left neofields. **85k:20203**  
**Kepka, T.** See **Ješek, Jaroslav**, **85b:20097**  
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**Lyakh, I. V.** Collineations of algebraic nets and autotrophies of orthogonal systems of operations. (Russian) **85k:20205**  
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**Polonijo, M.** Totally symmetric  $n$ -quasigroups which satisfy the three symmetries theorem. (Serbo-Croatian summary) **85f:20073**  
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Movsyan, Yu. M. Co-identities in algebras. (Russian. Armenian summary) 85h:08010

Padmanabhan, R. Logic of equality in geometry. 85m:08012

Polonjo, M. On  $C^{n+1}$ -systems and  $[n, m]$ -groupoids. 85k:20210

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Štířar, J. On affine planes over  $A_n^2$ -quasigroups. 85e:51003

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#### secondary classifications (20N10)

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Dudek, J. An affine space over GF(3) as a 4-groupoid. (See 85i:20006)

Glaeske, K. Bibliography of  $n$ -groups (polyadic groups) and some grouplike  $n$ -ary systems. 85j:20078

Remarks on polyadic groups and their weak homomorphisms. 85c:20066

Gleichgewicht, Bolesław (with Wanke-Jakubowska, M. B.; Wanke-Jerie, M. E.) On representations of cyclic  $n$ -groups. 85h:20091

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Havel, Václav General nets and their associated groupoids. 85j:20079

Janeva, Biljana Word problem for  $n$ -groups. (See 85i:20006)

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Rusakov, S. A.  $r$ -tuple skew elements of type  $k$  in periodic  $n$ -ary groups. (Russian) (See 85i:20006)

Stojaković, Zoran (with Paunić, Djura) Identities on multiquasigroups. (See 85i:20006)

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Walther, Frank Zerlegbarkeit von Polyquasigruppen. (English and Russian summaries) [The decomposability of polyquasigroups] 85h:20093

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Polonjo, M. Totally symmetric  $n$ -quasigroups which satisfy the three symmetries theorem. (Serbo-Croatian summary) 85f:20073

Trokhimenko, V. S. Stationary subsets of ordered Menger algebras. (Russian) 85h:08002

#### 20N99 None of the above, but in this section

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Comer, Stephen D. Extension of polygroups by polygroups and their representations using color schemes. 85d:20088

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Polygroups derived from cogroups. 85h:20094

Corini, Piergiulio Semiregular and regular hypergroups. (Italian. English summary) 85m:20105

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De Salvo, Mario  $K_\mu$ -hypergroups. (Italian. English summary) 85e:20062

Gu, Wen Xiang Pointwise fuzzy groups with operators. (Chinese. English summary) 85c:20067

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Liu, Rong Bin Equivalent definitions of pointwise fuzzy groups. (Chinese. English summary) (Not in MR)

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Corini, Piergiulio On a theorem of R. H. Bruck. (Italian. English summary) 85k:20164

Dudek, J. Varieties of idempotent commutative groupoids. 85j:08015

Jelek, Jaroslav (with Kepka, T.) Notes on distributive groupoids. 85b:20081

Kepka, T. See Jelek, Jaroslav, 85b:20081

Klukovits, L. On the independence of the mediality conditions. 85d:20063

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Nobusawa, Nobuo On a construction of exceptional pseudosymmetric sets. 85m:20006

Profera, Luigi Semisimple Lister ternary rings. (Italian. English summary) 85f:08001

Sessa, Salvatore On fuzzy subgroups and fuzzy ideals under triangular norms. 85j:20001

Yu, Yan Dong On some properties of fuzzy groups. (Chinese summary) 85j:20092

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## 22-XX TOPOLOGICAL GROUPS, LIE GROUPS (For transformation groups, see 54H15, 57Sxx, 58-XX. For abstract harmonic analysis, see 43-XX.)

### 22-00 Handbooks, dictionaries, and other reference works

Shtern, A. I. See Zhelobenko, D. P., 85g:22001

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Curtis, Morton L. ★Matrix groups. 85k:22001

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Pontryagin, L. S. ★Непрерывные группы. (Russian) [Continuous groups] 85k:22002

Postnikov, M. M. ★Группы и алгебры Ли. (Russian) [Lie groups and algebras] 85b:22001

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Gleason, Andrew M. How does one get so much information from so few assumptions? (See 85g:00029)

Litman, Otto (with Sekanina, M.) ★Úžití grup ve fyzice. (Czech) [The use of groups in physics] 85b:20001

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Xie, Bang Jie ★Chouxing daishuxue. (Chinese) [Abstract algebra] 85f:00002

### 22-02 Advanced exposition (research surveys, monographs, etc.)

Zuckerman, Gregg J. Geometric methods in representation theory. (See 85d:22001)

#### secondary classifications (22-02)

Carey, Alan L. Infinite-dimensional groups and quantum field theory. 85j:22034

Strătilă, Şerban (with Voiculescu, Dan) A survey on representations of the unitary group  $U(\infty)$ . 85i:22036

Voiculescu, Dan See Strătilă, Şerban, 85i:22036

### 22-03 Historical (must also be assigned at least one classification number from Section 01)

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Cartan, Élie ★Œuvres complètes. Partie I. (French) [Complete works. Part I] 85g:01032a

Gindikin, S. G. (with Kirillov, A. A.) Algebraic aspects of functional analysis. (Russian) (See 85g:01004)

Harish-Chandra ★Collected papers. Vol. I. 85e:01061a

★Collected papers. Vol. II. 85e:01061b

★Collected papers. Vol. III. 85e:01061c

★Collected papers. Vol. IV. 85e:01061d

(Howe, Roger) See Harish-Chandra, 85e:01061a

Kaplan, Irving Hilbert's 5th problem. (Norwegian. English summary) 85e:01036

Kirillov, A. A. See Gindikin, S. G., (85g:01004)

Kobayashi, Shoshichi The mathematical work of Y. Matsushima and its development. 85k:01047

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- 22A26 Topological semilattices, lattices and applications [See also 06B30, 06F30.]

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- Hewitt, E. (with Koshi, S.) Orderings in locally compact abelian groups and the theorem of F. and M. Riesz. 85a:43003  
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- 22B10 Structure of group algebras of LCA groups

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- 22D12 Other representations of locally compact groups

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- 22D15 Group algebras of locally compact groups

- McKennon, Kelly Correction to the paper: "The structure space of the trigonometric polynomials on a compact group" [J. Reine Angew. Math. 307/308 (1979), 166-172; MR 80j:22003]. 85k:22014

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- Bojanowska, Agnieszka The spectrum of equivariant  $K$ -theory. 85a:55003



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## 22D25 $C^*$ -algebras and $W^*$ -algebras arising from group representations [See also 46Lxx.]

- Hudson, R. L. (with Wilkinson, M. D.; Peck, S. N.) Fourier analysis on multiplier representations of locally compact abelian groups. 85i:22008  
Kasparov, G. G. Lorentz groups:  $K$ -theory of unitary representations and crossed products. (Russian) 85i:22015  
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- Batty, C. J. K. (with Carey, Alan L.; Evans, David E.; Robinson, Derek W.) Extending derivations. 85i:46006  
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Cohen, Joel M. Operator norms on free groups. (Italian summary) 85d:22011  
 $C^*$ -algebras of abelian groups. 85m:46064  
Combes, François Systèmes hilbertiens à gauche et représentation de Gelfand-Segal. (English summary) [Left Hilbert systems and Gelfand-Segal representations] 85c:46103  
Enock, Michel (with Schwartz, Jean-Marie) Deux résultats sur les représentations d'algèbres de Kac. (English summary) [Two results on representation of Kac algebras] 85j:46116  
Evans, David E. See Batty, C. J. K.; et al., 85i:46006  
Feldman, Jacob Amenability, hyperfiniteness, and Cartan subalgebras. 85i:46071  
Handelman, David (with Rosemann, Wulf) Product type actions of finite and compact groups. 85i:46077  
Hô Hô'u Viêt See Vuong Manh Son, 85i:22023  
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Peterson, Alan L. T. Harmonic analysis on unitary groups. 85i:22010  
Price, Geoffrey L. Pure states on some group-invariant  $C^*$ -algebras. 85j:46105  
Racher, Gerhard A proposition of A. Grothendieck revisited. 85c:43008  
Robinson, Derek W. See Batty, C. J. K.; et al., 85i:46006  
Rosebloom, Jonathan Homological invariants of extensions of  $C^*$ -algebras. 85h:46099  
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Schwartz, Jean-Marie See Enock, Michel, 85j:46116  
Smith, Martha K. Central zero divisors in group algebras. 85j:16013  
Takesaki, M. Operator algebras and their automorphism groups. 85d:46087  
Vuong Manh Son (with Hô Hô'u Viêt) Sur la structure des  $C^*$ -algèbres d'une classe de groupes de Lie. [On the structure of the  $C^*$ -algebras of a class of Lie groups] 85i:22023  
Williams, Dana P. See Muhly, Paul S., 85i:46074

## 22D30 Induced representations

- Anker, Jean-Philippe Applications de la  $p$ -induction en analyse harmonique. [Applications of  $p$ -induction in harmonic analysis] 85c:22006  
Kasparov, G. G. Type-adapted representations of semidirect product groups. 85a:22013

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- Green, Philip Twisted crossed products, the "Mackey machine", and the Effros-Hahn conjecture. 85a:46036  
Kawakami, Satoshi A remark of decompositions of the regular representations of semidirect product groups. 85d:22005

## 22D35 Duality theorems

- Butzmann, H.-P. Pontryagin duality for convergence groups of unimodular continuous functions. 85a:22014  
Kye, Seung Hyook Pontryagin duality in real linear topological spaces. 85j:22012  
McKennon, Kelly Erratum to: "The complexification and differential structure of a locally compact group" [Trans. Amer. Math. Soc. 267 (1981), no. 1, 237-258; MR 82k:22007]. 85i:22016  
Vainerman, L. I. Finite hypercomplex Kats systems. (Russian) 85a:22015

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- McMullen, John R. On the dual object of a compact connected group. 85c:22010  
Mironov, A. V. On the question of duality of ordered locally compact abelian groups. (Russian) 85a:22010

## 22D40 Ergodic theory on groups [See also 28Dxx and 43A60.]

- Dani, S. G. On ergodic quasi-invariant measures of group automorphism. 85d:22017  
Continuous equivariant images of lattice-actions on boundaries. 85i:22009  
Harmonic ergodicity of actions of certain discrete linear groups. 85c:22012  
Fabec, R. C. Cocycles, extensions of group actions and bundle representations. 85i:22017  
Furstenberg, Hillel (with Kifer, Yuri) Random matrix products and measures on projective spaces. 85i:22010  
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Proximal flows of Lie groups. 85g:22012  
Kifer, Yuri See Furstenberg, Hillel, 85i:22010  
Mella, Jean-François Groupes de valeurs propres des systèmes dynamiques et sous-groupes saturés du cercle. (English summary) [Eigenvalue groups of dynamical systems and saturated subgroups of the circle group] 85a:22017  
Schmidt, Klaus D. Two applications of a theorem of Glimm and Effros in ergodic theory. 85h:22011  
Asymptotic properties of unitary representations and mixing. 85j:22013  
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- Aoki, Nobuo (with Dateyama, Masahito) The relationship between algebraic numbers and expansiveness of automorphisms on compact abelian groups. 85f:22008  
Blum, Julius R. (with Reich, J. I.) Pointwise ergodic theorems in l.c.a. groups. 85g:28017  
Dateyama, Masahito See Aoki, Nobuo, 85f:22008  
Kalmanovich, V. A. Differential entropy of the boundary of a random walk on a group. (Russian) 85k:60016  
Keynes, Harvey B. (with Nerurkar, Mahesh G.) Generic theorems for lifting dynamical properties by continuous affine cocycles. 85g:28022  
Nerurkar, Mahesh G. See Keynes, Harvey B., 85g:28022  
Reich, J. I. See Blum, Julius R., 85g:28017  
Senf, Peter Darstellungen der kanonischen Vertauschungsrelationen in unendlich vielen Freiheitstadien. (English summary) [Representations of the canonical commutation relations in infinitely many degrees of freedom] 85h:81039  
Stepin, A. M. Amenability and ergodic properties of transformation groups. 85g:28024  
Varopoulos, Nicholas Th. Random walks on soluble groups. (French summary) 85c:60076  
Zimmer, Robert J. Ergodic actions of semisimple groups and product relations. 85b:22013  
Ergodic actions of arithmetic groups and the Kakutani-Markov fixed point theorem. (See 85d:00025)

## 22D45 Automorphism groups of locally compact groups

- Aoki, Nobuo (with Dateyama, Masahito) The relationship between algebraic numbers and expansiveness of automorphisms on compact abelian groups. 85f:22008  
Dateyama, Masahito See Aoki, Nobuo, 85f:22008  
de la Harpe, Pierre (with McDuff, Dusa) Acyclic groups of automorphisms. 85c:22007  
McDuff, Dusa See de la Harpe, Pierre, 85c:22007

## 22D99 None of the above, but in this section

- Metello de Nápoles, Susana Sur les fonctions analytiques dans les groupes localement compacts. (English summary) [On analytic functions in locally compact groups] 85b:22008

### secondary classifications (22D99)

- Grigorchuk, R. I. On the Milnor problem of group growth. (Russian) 85g:20042  
Sawar, Ryssard Convolution operators of weak type  $(p, p)$  which are not of strong type  $(p, p)$ . 85a:43002

## 22Exx Lie groups (For the topology of Lie groups and homogeneous spaces, see 57Sxx, 57Txx; for analysis thereon, see 43A80, 43A85, 43A90.)

### secondary classifications (22Exx)

- Borel, A. ★ Œuvres: collected papers. Vol. I. (French) 85f:01077a  
★ Œuvres: collected papers. Vol. II. (French) 85f:01077b  
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Godement, Roger ★ Introduction à la théorie des groupes de Lie. Tome 1. (French) [Introduction to the theory of Lie groups. Vol. 1] 85i:22001a  
★ Introduction à la théorie des groupes de Lie. Tome 2. (French) [Introduction to the theory of Lie groups. Vol. 2] 85i:22001b  
(Krämer, Manfred) See Tits, Jacques, 85j:22001  
(Scheerer, H.) See Tits, Jacques, 85j:22001  
Tits, Jacques ★ Liesche Gruppen und Algebren. (German) [Lie groups and algebras] 85j:22001

## 22E05 Local Lie groups [See also 34-XX, 35-XX, 58H05.]

- Birkhoff, Garrett Nonlinear product integration. 85i:22011  
Burenkov, V. I. Direct proof of the Campbell-Baker formula. (Russian) 85j:22014

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- Gronau, Detlef Two iterative functional equations for power series. 85d:39008

- Murdock, James A unified treatment of some expansion procedures in perturbation theory: Lie series, Faà di Bruno operators, and Arbogast's rule. **85d:58074**
- Reid, James L. (with Strobel, G. L.) The nonlinear superposition theorem of Lie and Abel's differential equations. **85c:34016**
- Strobel, G. L. See Reid, James L., **85c:34016**
- Winternitz, P. Lie groups and solutions of nonlinear differential equations. **85k:58090**

## 22E10 General properties and structure of complex Lie groups

[See also 32M05.]

secondary classifications (22E10)

- Nguyễn Văn Dũng The fundamental groups of the spaces of regular orbits of the affine Weyl groups. **85f:57001**

## 22E15 General properties and structure of real Lie groups

- Borel, A. On free subgroups of semisimple groups. **85c:23009**
- Delligne, Pierre (with Sullivan, Dennis P.) Division algebras and the Hausdorff-Banach-Tarski paradox. **85c:22008**
- Dong, Fa Yun See Zeng, Bao Sheng; et al., **85d:22020**
- Gershkovich, V. Ya. Estimates of metrics generated by nonholonomic distributions on Lie groups. (Russian. English summary) **85k:22018**
- Kurosov, V. V. Commutators in real Chevalley groups. (Russian. English summary) **85j:22015**
- Stepanov, N. A.  $\rho$ -spaces of a semidirect product of Lie groups. (Russian) **85d:22019**
- Sullivan, Dennis P. See Delligne, Pierre, **85c:22008**
- Syed, Anasruddin A new set of Euler angles for the generalized Lorentz group. **85m:22009**
- Wang, Shun Jin See Zeng, Bao Sheng; et al., **85d:22020**
- Zăgărescu, M. The elliptic parametrization of the group  $SO(3)$  and of the automorphisms  $E_7$ ,  $S$ . **85h:22012**
- Zeng, Bao Sheng (with Zhu, Shi Quan; Dong, Fa Yun; Wang, Shun Jin) Analytic expressions for the structure constants of the group  $SP(2n)$ . (Chinese. English summary) **85d:22020**
- Zhu, Shi Quan See Zeng, Bao Sheng; et al., **85d:22020**

secondary classifications (22E15)

- Crouch, P. E. (with Silva Leite, F.) On the uniform finite generation of  $SO(n, \mathbb{R})$ . **85c:93016**
- De Wilde, M. (with Lecomte, Pierre B. A.) Star-products on cotangent bundles. **85f:58039a**
- (with Lecomte, Pierre B. A.) Erratum to: "Star-products on cotangent bundles". **85f:58039b**
- Epstein, Jerome (with Schucking, E. L.) Geometry of the  $SU_3$  group. **85b:81072**
- Gütt, S. An explicit  $\ast$ -product on the cotangent bundle of a Lie group. **85g:58037**
- Hofmann, Karl H. (with Lawson, Jimmie D.) Foundations of Lie semigroups. **85k:22010**
- Kimelfeld, B. N. Homogeneous domains on real quadrics of index 2. **85f:11025**
- Lawson, Jimmie D. See Hofmann, Karl H., **85k:22010**
- Lecomte, Pierre B. A. See De Wilde, M., **85f:58039a** and **85f:58039b**
- Majchraak, R. On a weak coregular division of a differential space. **85j:58019**
- Pittig, Gh. See Simionescu, Cornel, **85g:53037**
- Schucking, E. L. See Epstein, Jerome, **85b:81072**
- Silva Leite, F. See Crouch, P. E., **85c:93016**
- Simionescu, Cornel (with Pittig, Gh.) Connexions linéaires compatibles avec les structures de groupes de Lie sur les variétés compactes. [Linear connections compatible with Lie group structures on compact manifolds] **85g:53037**

## 22E20 General properties and structure of other Lie groups

- Choucroun, Francis Groupes opérant simplement transitivement sur un arbre homogène et plongements dans  $PGL_2(k)$ . (English summary) [Groups acting simply transitively on a homogeneous tree and embeddings in  $PGL_2(k)$ ] **85d:22021**

secondary classifications (22E20)

- Castellano, B. Michael On the topological structure of a monoid on a manifold with boundary. **85d:22007**
- Lee, Dong Hoon (with Wu, Ta Sun) On prealgebraic groups. **85j:14089**
- Wu, Ta Sun See Lee, Dong Hoon, **85j:14089**

## 22E25 Nilpotent and solvable Lie groups

- Barker, S. R. (with Salamon, S. M.) Analysis on a generalized Heisenberg group. **85d:22022**
- Bohnke, G. Synthèse spectrale dans les algèbres de Sobolev non isotropes. [Spectral synthesis in nonisotropic Sobolev algebras] (Not in MR)
- Corwin, L. Criteria for solvability of left invariant operators on nilpotent Lie groups. **85g:22013**
- Howe, Roger A symbolic calculus for nilpotent groups. **85k:22019**
- Jacobsen, Jacob  $\ast$ Invariant differential operators on some homogeneous spaces for solvable Lie groups. **85c:22010**
- Kengmana, Thongchai Characters of the discrete series for pseudo-Riemannian symmetric spaces. (See **85d:22001**)
- Nghiêm Xuân Hải La transformation de Fourier-Plancherel analytique des groupes de Lie. I. Algèbres de Weyl et opérateurs différentiels. [The analytic Fourier-Plancherel transform of Lie groups. I. Weyl algebras and differential operators] **85k:22020a**
- La transformation de Fourier-Plancherel analytique des groupes de Lie. II. Les groupes nilpotents. (English summary) [The analytic Fourier-Plancherel transform of Lie groups. II. Nilpotent groups] **85k:22020b**
- Poguntke, Detlev Kunze-Stein phenomenon and  $LP$ -estimates of matrix coefficients for a certain solvable Lie group. **85k:22021**

- Pukansky, L. Symplectic structure on generalized orbits of solvable Lie groups. **85m:22010**

- Salamon, S. M. See Barker, S. R., **85d:22022**

- Zăgărescu, M. The Heisenberg group, theta-functions and the group  $SO(3)$ . **85j:22016**

secondary classifications (22E25)

- Battesti, Françoise Solution élémentaire d'un opérateur bi-invariant sur certains groupes nilpotents. (English summary) [Fundamental solution of a bi-invariant operator on certain nilpotent groups] **85h:22014**
- Bereznyĭ, A. E. Discrete subexponential groups. (Russian. English summary) **85g:43001**
- Cordes, Helmut O. A pseudo-algebra of observables for the Dirac equation. **85e:58143**
- Corwin, L. (with Greenleaf, F. P.) A formula for distribution trace characters on nilpotent Lie groups. **85a:22018**
- Necessary and sufficient conditions for hypoellipticity of certain left invariant operators on nilpotent Lie groups. **85h:58156**
- Dunkl, Charles F. An addition theorem for Heisenberg harmonics. **85f:33018**
- Élie, Laure Comportement asymptotique du noyau potentiel sur les groupes de Lie. [Asymptotic behavior of the potential kernel on Lie groups] **85b:60005**
- Gordon, Carolyn (with Wilson, Edward N.) Isospectral deformations of compact solvmanifolds. **85j:58143**
- Greenleaf, F. P. See Corwin, L., **85a:22018**
- Helfer, B. (with Nourrigat, J.) Théorèmes d'indice pour des opérateurs différentiels à coefficients polynomiaux. [Index theorems for differential operators with polynomial coefficients] **85h:22016**
- Joy, Kenneth I. A description of the topology on the dual space of a nilpotent Lie group. **85c:22013**
- Klimenko, K. G. Spontaneous breakdown of symmetry in some Higgs potentials. (Russian. English summary) **85a:81048**
- Korányi, Adam Geometric aspects of analysis on the Heisenberg group. **85h:32055**
- Lohaus, N. Une classe d'opérateurs différentiels invariants sur le groupe de Heisenberg. [A class of invariant differential operators on the Heisenberg group] **85b:58131**
- Miller, Kenneth G. Inverses and parametrics for right-invariant pseudodifferential operators on two-step nilpotent Lie groups. **85e:58144**
- Microhypoellipticity on step two nilpotent Lie groups. **85e:58156**
- Müller, Detlef Horst Calderón-Zygmund kernels carried by linear subspaces of homogeneous nilpotent Lie algebras. **85g:43004**
- Nourrigat, J. See Helfer, B., **85h:22016**
- Pansu, Pierre Une inégalité isopérimétrique sur le groupe de Heisenberg. (English summary) [An isoperimetric inequality on the Heisenberg group] **85b:53044**
- Croissance des boules et des géodésiques fermées dans les nilvariétés. (English summary) [Growth of balls and closed geodesics in nilmanifolds] **85m:53040**
- Poguntke, Detlev Algebraically irreducible representations of  $L^1$ -algebras of exponential Lie groups. **85c:22014**
- Schubert, Matthias  $\ast$ Die Geometrie nilpotenter Liegruppen mit linksinvarianter Metrik. (German) [The geometry of nilpotent Lie groups with left-invariant metrics] **85m:53054**
- Silva, Alessandro Homogeneous Kähler spaces of solvable complex Lie groups. (Italian. English summary) **85k:32059a**
- Errata: "Homogeneous Kähler spaces of solvable complex Lie groups". (Italian) **85k:32059b**
- Starkov, A. N. Flows on compact solvmanifolds. (Russian) **85j:58097**
- Wilson, Edward N. See Gordon, Carolyn, **85j:58143**

## 22E27 Representations of nilpotent and solvable Lie groups (special orbital integrals, non-Type I representations, etc.)

- Abouelaz, Ahmed Comportement asymptotique de certains caractères des groupes de Lie nilpotents. (English summary) [Asymptotic behavior of certain characters of nilpotent Lie groups] **85g:22014**
- Corwin, L. (with Greenleaf, F. P.) A formula for distribution trace characters on nilpotent Lie groups. **85a:22018**
- Cowling, Michael G. Harmonic analysis on some nilpotent Lie groups (with application to the representation theory of some semisimple Lie groups). **85i:22012**
- Cygan, Jacek M. (with Richardson, Leonard F.) Global solvability on two-step compact nilmanifolds. **85f:22009**
- Greenleaf, F. P. See Corwin, L., **85a:22018**
- Hồ Hữu Việt See Vuong Manh Son, **85k:22023**
- Jacobsen, Jacob Eigenspace representations of nilpotent Lie groups. II. **85g:22015**
- Joy, Kenneth I. A description of the topology on the dual space of a nilpotent Lie group. **85c:22013**
- Kaplan, Arnold G. Composition of quadratic forms in geometry and analysis: some recent applications. (See **85k:11001**)
- Pedersen, Niels Vigand On the characters of exponential solvable Lie groups. **85k:22022**
- Poguntke, Detlev Algebraically irreducible representations of  $L^1$ -algebras of exponential Lie groups. **85c:22014**
- Pukansky, L. Unitary representation of Lie groups and generalized symplectic geometry. **85b:22009**
- Richardson, Leonard F. See Cygan, Jacek M., **85f:22009**
- Schempp, Walter Gruppentheoretische Aspekte der Signalübertragung und der kardinalen Interpolationsplines. I. (English summary) [Group-theoretic aspects of signal processing and of cardinal interpolation splines. I] **85c:22011a**
- Attenuation factors and nilpotent harmonic analysis. **85c:22011b**
- Sevast'yanov, L. A. An analogue of the Paley-Wiener theorem for metabelian Lie groups. (Russian. English summary) **85h:22013**
- Vuong Manh Son (with Hồ Hữu Việt) Sur la structure des  $C^*$ -algèbres d'une classe de groupes de Lie. [On the structure of the  $C^*$ -algebras of a class of Lie groups] **85k:22023**

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- Corwin, L. (with Greenleaf, F. P.) Solvability of certain left-invariant differential operators by nilmanifold theory. **85a:23030**
- Greenleaf, F. P. See Corwin, L., **85a:23030**
- Müller, Detlef Horst Calderón-Zygmund kernels carried by linear subspaces of homogeneous nilpotent Lie algebras. **85g:43004**
- Pukanszky, L. Symplectic structure on generalized orbits of solvable Lie groups. **85m:22010**
- 22E30 Analysis on real and complex Lie groups [See also 33A75, 43-XX.]**
- Aarnes, J. F. Factorization in  $L^p(G)$  and the Plancherel theorem for nonunimodular Lie groups. **85g:22016**
- van den Ban, E. P. Asymptotic behaviour of Eisenstein integrals. **85g:22017**
- Battisti, François Solution élémentaire d'un opérateur bi-invariant sur certains groupes nilpotents. (English summary) [Fundamental solution of a bi-invariant operator on certain nilpotent groups] **85h:22014**
- Benabdallah, Abdel-Ilah (with Rouvière, François) Résolubilité des opérateurs bi-invariants sur un groupe de Lie semi-simple. (English summary) [Solvability of bi-invariant operators on a semisimple Lie group] **85j:22017**
- Blecker, David D. Harmonic analysis on the space-time gauge continuum. **85a:22019**
- Cabrera, José Luis A theorem about the bi-invariant  $n$ -measure on Lie groups. (See **85g:00026**)
- Chen, Guang Xiao (with He, Zu Qi) Harmonic analysis on unitary-symplectic group. III. Abel summability of Fourier series. (Chinese. English summary) **85g:22019** (with He, Zu Qi) Harmonic analysis on unitary-symplectic group. IV. Spherical summability of Fourier series. (Chinese. English summary) **85g:22020**
- See also He, Zu Qi, **85g:22018**
- Corwin, L. (with Greenleaf, F. P.) Solvability of certain left-invariant differential operators by nilmanifold theory. **85a:23030**
- De Cannière, Jean Unbounded approximate units of the Fourier algebra of  $SO_+(n, 1)$ . **85j:22013**
- Delorme, Patrick Multipliers for the Hecke algebra of a real semisimple Lie group. (Not in MR)
- Gaudry, Garth I. An extension of de Leeuw's theorem to the  $n$ -dimensional rotation group. (See **85d:22002**)
- Głowacki, Paweł On commutative approximate identities on nongraded homogeneous groups. **85m:22011**
- Greenleaf, Allan Pointwise convergence of singular convolution operators. **85f:22010**
- Greenleaf, F. P. See Corwin, L., **85a:23030**
- Glünther, P. The Poisson formula for Euclidean space groups and some of its applications. I. (German and Russian summaries) **85j:22018**
- Gurevich, D. I. Generalized translation operators on Lie groups. (Russian. English and Armenian summaries) **85h:22015**
- He, Zu Qi (with Chen, Guang Xiao) Harmonic analysis on unitary-symplectic group. II. Cesàro summability of Fourier series. (Chinese. English summary) **85g:22018**
- See also Chen, Guang Xiao, **85g:22019** and **85g:22020**
- Helfer, B. (with Nourrigat, J.) Théorèmes d'indice pour des opérateurs différentiels à coefficients polynomiaux. [Index theorems for differential operators with polynomial coefficients] **85h:22016**
- Hulanicki, A. (with Jenkins, J. W.) Almost everywhere summability on nilmanifolds. **85f:22011**
- Jenkins, J. W. See Hulanicki, A., **85f:22011**
- Kaplan, Aroldo G. (with Ricci, F.) Harmonic analysis on groups of Heisenberg type. **85k:22017**
- Kawasoe, Takeshi Summability theorem on real rank 1 semisimple Lie groups. **85d:22023**
- Lohoué, N. (with Rychener, Th.) Some function spaces on symmetric spaces related to convolution operators. **85d:22024**
- Melimi, Rachid Équation de la chaleur sur un espace riemannien symétrique et formule de Plancherel. (English summary) [The heat equation on a Riemannian symmetric space and the Plancherel formula] **85f:22012**
- Nomura, Takaaki The Paley-Wiener type theorem for the oscillator group. **85k:22024**
- Nourrigat, J. See Helfer, B., **85h:22016**
- Pedersen, Niels Vigand Lie groups with smooth characters and with smooth semicharacters. **85c:22012**
- Platonov, S. S. Invariant subspaces in certain function spaces on an elementary solvable Lie group. (Russian) **85j:22019**
- Ricci, F. See Kaplan, Aroldo G., **85h:22017**
- Rouvière, François Sur la transformation d'Abel des groupes de Lie semisimples de rang un. (English summary) [The Abel transform of semisimple Lie groups of rank one] **85d:22025**
- See also Benabdallah, Abdel-Ilah, **85j:22017**
- Rychener, Th. See Lohoué, N., **85d:22024**
- Schlichtkrull, Henrik One-dimensional  $K$ -types in finite-dimensional representations of semisimple Lie groups: a generalization of Helgason's theorem. **85i:22014**
- Shitikov, I. I. The Poisson transform on an imaginary Lobachevskii space. (Russian) **85k:22025**
- Sjögren, Peter Fatou theorems and maximal functions for eigenfunctions of the Laplace-Beltrami operator in a bidisk. **85k:22026**
- Stein, E. M. Boundary behavior of harmonic functions on symmetric spaces: maximal estimates for Poisson integrals. **85j:22020**
- Thomas, Erik G. F. An infinitesimal characterization of Gelfand pairs. **85i:22015**
- Vergne, Michele A Plancherel formula without group representations. **85g:22021**
- Arthur, James Multipliers and a Paley-Wiener theorem for real reductive groups. **85f:22014**
- Bannai, Eiichi (with Blokhuis, A.; Seidel, J. J.; Delarte, Ph.) An addition formula for hyperbolic space. **85m:52006**
- Benabdallah, Abdel-Ilah Générateurs de l'algèbre  $\mathcal{U}(G)^K$ , avec  $G = SO(m)$  ou  $SO_0(1, m-1)$  et  $K = SO(m-1)$ . [Generators of the algebra  $\mathcal{U}(G)^K$ , with  $G = SO(m)$  or  $SO_0(1, m-1)$  and  $K = SO(m-1)$ ] (Not in MR)
- Berenstein, Carlos A. (with Shahshahani, Mehrdad) Harmonic analysis and the Pompeiu problem. **85d:32061**
- Blokhuis, A. See Bannai, Eiichi; et al., **85m:52006**
- Bondiolli, Cristiana A Paley-Wiener theorem for ultradifferentiable functions on a symmetric space. **85i:43018**
- Bonnet, Pierre Transformation de Fourier des distributions de type positif sur un groupe de Lie unimodulaire. [Fourier transform of positive distributions on unimodular Lie groups] **85j:22023**
- Cassaniga, Franco (with Giacalone, Ermanno) Hardy's inequality for compact symmetric spaces. (Italian summary) **85d:43007**
- Chakrabarti, Asit Baran Group theoretic study of certain generalised functions of Jacobi polynomial. **85k:33013**
- Corwin, L. Criteria for solvability of left invariant operators on nilpotent Lie groups. **85g:22013**
- Cygan, Jacek M. (with Richardson, Leonard F.) Global solvability on two-step compact nilmanifolds. **85f:22009**
- Delorme, Patrick Multipliers for the convolution algebra of left and right  $K$ -finite compactly supported smooth functions on a semisimple Lie group. **85i:43017**
- Delarte, Ph. See Bannai, Eiichi; et al., **85m:52006**
- Dong, Dao Zhen (with Wang, Shi Kun) Harmonic analysis on rotation groups. II. Cesàro summability of Fourier series. (Chinese) **85j:43008**
- See also Wang, Shi Kun, **85j:43007** and **85j:43009**
- Dunkl, Charles F. An addition theorem for Heisenberg harmonics. **85f:33018**
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- Vanden Bergh, G. (with De Meyer, H.; Van der Jeugt, J.) Tensor operator realizations of  $E_6$  and structural zeros of the 6j-symbol. 85h:81037
- See also De Wilde, P.; et al., 85b:81070; Van der Jeugt, J.; et al., 85b:81074; Van der Jeugt, J.; et al., 85d:81055 and De Wilde, P.; et al., 85k:81076
- Van der Jeugt, J. (with De Meyer, H.; Vanden Bergh, G.) Shift operator approach of the spin-isospin supermultiplet state labelling problem: eigenvalue determination of the  $\Omega$  and  $\Phi$  labelling operators. 85b:81074
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- Vershik, A. M. Metagonal and metaplectic infinite-dimensional groups. I. General notions and the metagonal group. (Russian. English summary) 85e:27027
- Wang, Fan See Chen, Jin Quan; et al., 85f:81233
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- Wong, M. K. F. (with Yeh, Hain Yang) Group theoretic treatment of the Dirac-Coulomb equation and matrix elements of its tensor operators. 85m:81066
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- Yeh, Hain Yang See Wong, M. K. F., 85m:81066
- Yu, Zu Rong Hyperspherical function and  $Sp(2, \mathbb{R})$  group. 85k:81187
- Zaikov, R. P. See Sotkov, G. M., 85k:81093
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- Clanci, Roberto Supermanifolds and automorphisms of super Lie groups. 85j:23044
- Fernández, Ariel (with Sinanoglu, Oktay) The lifting of an İnönü-Wigner contraction at the level of universal coverings. 85a:22031
- Sinanoglu, Oktay See Fernández, Ariel, 85a:22031
- Zimmer, Robert J. On the Mostow rigidity theorem and measurable foliations by hyperbolic space. 85b:22023

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- Bes, H. E. A unified treatment of invariance for curve- and surface-defining algorithms. 85b:85008
- van den Broek, P. M. Twistor space, Minkowski space and the conformal group. 85f:81028
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- Kobayashi, Yujii (with Nagamachi, Shigeaki; Miyamoto, Haruo) Lie groups and Lie algebras with generalized Bose-Fermi symmetric parameters. 85f:17009
- Kuang, Liang Hao Properties of manifolds for which the transformation group has a stabilizer which is an invariant subgroup. (Chinese. English summary) 85j:57066
- Kubarski, Jan Exponential mapping for Lie groupoids. 85b:58135
- Miyamoto, Haruo See Kobayashi, Yujii; et al., 85f:17009
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- Bopae, K. V. Some new discrete inequalities. (Russian. English and Bulgarian summaries) (Not in MR)
- Markwardt, Klaus Eine teilweise geordnete Halbstruktur als Ausgangspunkt zur Entwicklung einer Analysis. [A partially ordered semistructure as starting point for the development of an analysis] (Not in MR)

## 26-00 Handbooks, dictionaries, and other reference works

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- Brychkov, Yu. A. See Prudnikov, A. P.; et al., 85b:33002
- Marichev, O. I. See Prudnikov, A. P.; et al., 85b:33002
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- Lang, Serge ★Undergraduate analysis. 85k:26001
- Marineanu, Gheorghe ★Analiză matematică. Vol. I. (Romanian) [Mathematical analysis. Vol. I] 85a:26002
- Ver Eecke, Paul ★Fondements du calcul différentiel. (French) [Foundations of differential calculus] 85i:26001
- Zorica, Alexandru Popescu The number series "e" and an order relation. (Not in MR)

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- (Canetta, Cesira) See Gelbaum, Bernard R., 85i:00002
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- (Hewitt, E.) See Pontryagin, L. S., 85a:00005
- Letac, Gérard ★Intégration et probabilités. Analyse de Fourier et analyse spectrale. (French) [Integration and probability. Fourier analysis and spectral analysis] 85c:00003
- Nikol'skii, S. M. ★Курс математического анализа. Том I. (Russian) [Course in mathematical analysis. Vol. I] 85f:00001a
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- Olmsted, John M. H. See Gelbaum, Bernard R., 85i:00002
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- Kurepa, Djuro Around Bolzano's approach to real numbers. 85f:26001
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- Bevor, O. V. Theory of differentiable functions of several variables (embedding theorems). (Russian) (See 85g:01004)
- (Darboux, Gaston) See Gispert, Hélène, 85f:01017
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- Ghizzetti, Aldo Aspects of the work of Guido Fubini in the field of mathematical analysis. (Italian) 85b:01029
- Gispert, Hélène Sur les fondements de l'analyse en France (à partir de lettres inédites de G. Darboux et de l'étude des différentes éditions du *Cours d'analyse* de C. Jordan). [On the foundations of analysis in France (based on unpublished letters of G. Darboux and a study of the different editions of C. Jordan's *Course in analysis*)] 85f:01017
- Grahiser, Judith V. The changing concept of change: the derivative from Fermat to Weierstrass. 85a:01003
- Horváth, Miklós The problem of the infinitely small in mathematics, in the work of Leibniz. (Hungarian) 85b:01018
- (Houllé, Jacques) See Gispert, Hélène, 85f:01017
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- Santa Barbara, Calif. ★Seventh symposium on real analysis. 85g:26001
- Symposium:  
Real analysis ★Seventh symposium on real analysis. 85g:26001
- secondary classifications (26-06)
- Waterloo, Ont. ★Sixth summer symposium on real analysis. 85d:00028

## 26Axx Functions of one variable

## 26A03 Foundations: limits and generalizations, elementary topology of the line

- Borsák, Ján (with Korec, Ivan) Order-preserving mappings of countable dense sets of reals. (Russian and Slovak summaries) 85f:26002
- Higgs, Denis Iterating the derived set function. 85b:26001
- Korec, Ivan See Borsák, Ján, 85f:26002
- Thadde, Josef Constructions of some non- $\sigma$ -porous sets on the real line. 85m:26001
- Zalik, R. A. Embedding of weak Markov systems. 85f:26003

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- Abian, Alexander Determinant version of Taylor theorems and some generalizations. 85m:26002
- Dias Reguero, Manuel Power series of a function. (Spanish. English summary) 85j:26001
- Rubin, Richard L. Linear operators satisfying the chain rule. 85a:26003

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- Bilushchak, G. I. (with Ivnal, V. K.) The generalized Abel-Goncharov formula. (Russian) (Not in MR)
- Del Vecchio, Teresa On relative approximate derivatives. (Italian) 85e:26006
- Ivnal, V. K. See Bilushchak, G. I., (Not in MR)
- Kekić, Jovan D. Reproductivity of some equations of analysis. II. 85d:45002
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- Akhundov, R. R. See Makhmudov, A. S., 85d:26001
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- Boherman, Michael New "orders of infinity". 85b:26002
- Martić, Branislav A functional limit theorem and its application. (Serbo-Croatian summary) 85j:26003

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- Long, Rui Lin A property of convex function. 85m:26014
- Mogyoródi, J. (with Móri, T. F.) Necessary and sufficient condition for the maximal inequality of convex Young functions. 85d:60086
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- Rosenlicht, Maxwell Hardy fields. 85d:12001
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- Rank change on adjoining real powers to Hardy fields. 85i:12008

## 26A15 Continuity and related questions (modulus of continuity, semicontinuity, discontinuities, etc.) [For properties determined by Fourier coefficients, see 42A16; for those determined by approximation properties, see 41A25.]

- Agronsky, S. J. Associated sets and continuity roads. 85b:26001
- Akemann, Charles A. (with Bruckner, A. M.) On threading continuous functions through compact sets. 85a:26004
- Bruckner, A. M. See Akemann, Charles A., 85a:26004
- Drianov, D. P. Average modulus of smoothness of fractional index and fractional order derivatives. 85b:26003
- Evans, Michael Jon (with Humke, Paul D.)  $L_p$  smoothness and approximate continuity. 85m:26003
- Grande, Eulalia Sur les fonctions ayant la propriété (H). [Functions with the (H) property] 85m:26004
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- Humke, Paul D. See Evans, Michael Jon, 85m:26003
- Kaplan, L. I. Points of discontinuity of a function and points of existence of a finite and infinite derivative. (Russian) 85f:26004
- Kolyada, V. I. On the metric Darboux property. (Russian. English summary) 85g:26002
- Laczkovich, M. On the difference property of the class of pointwise discontinuous functions and of some related classes. 85j:26003
- Natkaniec, Tomasz On semicontinuity points. 85e:26001
- Ostaszewski, Krzysztof Continuity in the density topology. II. 85g:26003
- Pawlak, Helena (with Pawlak, Ryszard) On some conditions equivalent to the condition of Świątkowski for Darboux functions of one and two variables. (Russian and Polish summaries) 85f:26005
- Pawlak, Ryszard See Pawlak, Helena, 85f:26005
- Salát, Tibor On discontinuity points of functions of some classes. (Russian and Slovak summaries) 85e:26002
- On points of absolute continuity of continuous functions. (Russian and Slovak summaries) 85e:26003
- Snipes, Ray F. Is every continuous function uniformly continuous? 85d:26002
- Švrák, Vladimír Two connected topologies on the real line. 85a:26005
- Zaharescu, Alexandru Graph-continuous functions. (Romanian. English summary) 85b:26004a
- Representation of arbitrary functions by graph-continuous Darboux functions. (Romanian. English summary) 85b:26004b

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- Goetheluck, Pierre Un résultat de division obtenu par les méthodes de l'approximation. [A division result obtained by approximation methods] 85e:41016
- Hoffmann, Armin Bemerkungen zum Stetigkeitsmodul. [Remarks on the modulus of continuity] 85c:54020
- Jaskula, Janusz See Sakopíńska, Bożena, 85h:26007
- Julian, William (with Richman, Fred) A uniformly continuous function on  $[0, 1]$  that is everywhere different from its infimum. 85m:03042
- Kubáčeková, Elena See Smítal, Jaroslav, 85f:54026
- Pawlak, Helena (with Pawlak, Ryszard) On continuity and limit points of  $w$ -Darboux functions. 85b:54020
- Pawlak, Ryszard See Pawlak, Helena, 85b:54020
- Richman, Fred See Julian, William, 85m:03042
- Smítal, Jaroslav (with Kubáčeková, Elena) On weakly closed functions. (Russian and Slovak summaries) 85f:54026
- Sakopíńska, Bożena (with Jaskula, Janusz) On some problem of Marcus. 85h:26007
- Trudník, L. I. Continuity properties of vector-valued convex functions. 85d:46062
- Yudin, V. A. Distribution of points on a sphere in a Banach space and the modulus of continuity of a function. (Russian) 85j:46028
- Zalik, R. A. Embedding of weak Markov systems. 85f:26003

## 26A16 Lipschitz (Hölder) classes

- Lu, Zhu Jia (with Wang, Chuan Fang) On the existence of two kinds of functions. (Chinese. English summary) 85j:26004
- Wang, Chuan Fang See Lu, Zhu Jia, 85j:26004

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- Sawczuk-Jóźwiak, Elżbieta On some mappings preserving the points of porosity. (Russian and Polish summaries) 85f:26006

26A18 Iteration [See also 39B10, 47H10, 54H25, 58F08.]

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Smoothness in disjoint groups of real functions under composition. 85a:26006

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Baker, I. N. (with Rippon, P. J.) Convergence of infinite exponentials. 85g:30039

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Smital, Jaroslav (with Smitalová, K.) Erratum: "Structural stability of nonchaotic difference equations" [J. Math. Anal. Appl. 90 (1982), no. 1, 1-11; MR 84d:58046]. 85f:58065

(with Neubrunnová, K.) Stability of typical continuous functions with respect to some properties of their iterates. 85g:54040

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26A21 Classification of real functions; Baire classification of sets and functions [See also 04A15, 28A05, 54C50.]

Bruckner, A. M. (with Petruska, G.) Some typical results on bounded Baire 1 functions. 85h:26004

Ceder, J. On globs. 85c:26001

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Pu, Huan Wén (with Pu, Huo Hui Min) Associated sets of Baire\* 1 functions. 85j:26006

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Arias de Reyna Martínez, Juan Some results connected with a problem of Erdős. III. 85d:28001

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Morgan, John C., II On the Borel  $\sigma$ -field and the Baire property. 85c:26001

Reinov, O. I. Functions of the first Baire class with values in metric spaces, and some of their applications. (Russian. English summary) 85f:46075

26A24 Differentiation (functions of one variable): general theory, generalized derivatives, mean-value theorems [See also 28A15.]

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Bruckner, A. M. (with Ceder, J.) On a special class of Darboux Baire 1 functions. 85a:26007

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O'Malley, R. J. (with Weil, C. E.) Selective, bisective, and composite differentiation. 85k:26004

Ostaszewski, Krzysztof Two modifications of the approximate derivative. 85c:26003

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A proof of one of the new explicit formulas for the  $n$ th derivative of a composite function by the Cauchy formula when the composite formula is regular. (Bulgarian. English and Russian summaries) 85h:26009

Weil, C. E. See O'Malley, R. J., 85k:26004

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Bromberg, Shirley An extension theorem in the class  $C^1$ . (Spanish) 85k:58011

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Ioffe, A. D. Calculus of Dini subdifferentials of functions and contingent coderivatives of set-valued maps. 85k:46049

Jodelt, Max, Jr. On the decomposition of  $L^1(\mathbb{R})$  functions into humps. 85d:42009

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26A27 Nondifferentiability (nondifferentiable functions, points of nondifferentiability), discontinuous derivatives

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- Lu, Zhu Jia (with Wang, Chuan Fang) On the existence of two kinds of functions. (Chinese. English summary) **85j:26004**
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- Strójwas, H. M. See Borwein, J. M., **85m:49028**
- Wang, Chuan Fang See Lu, Zhu Jia, **85j:26004**
- Zajtek, Luděk A note on partial derivatives of convex functions. **85c:26008**

### 26A30 Singular functions, Cantor functions, functions with other special properties

- Laczkovich, M. Some remarks on Faber's singular function. (Hungarian) **85a:26011**
- Libicki, Inga On generalized cluster sets. **85c:26004**
- Liu, Wen On locally recurrent functions. (Chinese) **85k:26007**
- Posey, E. E. (with Vaughan, Jerry E.) Functions with a proper local maximum in each interval. **85a:26012**
- Vaughan, Jerry E. See Posey, E. E., **85a:26012**

secondary classifications (26A30)

- Gulvare'h, Y. (with Raugi, A.) Sur les mesures invariantes de certaines chaînes de Markov définies par des transformations homographiques. [Invariant measures of certain Markov chains defined by homographic transformations] **85i:40044**
- Raugi, A. See Gulvare'h, Y., **85i:40044**
- Ryde, Folke On the relation between two Minkowski functions. **85h:11008**

### 26A33 Fractional derivatives and integrals

- Fugère, B. J. See Tremblay, R., **85m:26010**
- Gatto, Angel E. (with Gutiérrez, Cristian E.; Wheeden, Richard L.) On weighted fractional integrals. **85f:26010**
- Gutiérrez, Cristian E. See Gatto, Angel E.; et al., **85f:26010**
- Kiryakova, V. S. See Raina, R. K., **85a:26013**
- Kobayashi, Tetsuo See Nishimoto, Katsuyuki, **85k:26010**
- Nishimoto, Katsuyuki On the fractional order's differintegral equation  $w_\nu \cdot g - w_{\nu-1} \cdot h = 0$ . **85k:26006**  
On the fractional order's differintegral equations  $w_\nu \cdot z + w_{\nu-1} = f$ ,  $w_\nu \cdot z - w_{\nu-1} = f$  and some functional relationships. **85k:26009**  
(with Kobayashi, Tetsuo) Some theorems derived from the fractional differentiation of products. **85k:26010**  
(with Owa, Shigeyoshi; Srivastava, Hari M.) Solutions to a new class of fractional differintegral equations. **85h:26010b**  
On the fractional order's differintegral equation  $w_\nu + w_{\nu-1} \cdot g = f$ . **85m:26008**  
See also Srivastava, Hari M.; et al., **85h:26010a** and Sekine, Tadayuki, **85k:26011**
- Owa, Shigeyoshi See Srivastava, Hari M.; et al., **85h:26010a** and Nishimoto, Katsuyuki; et al., **85h:26010b**
- Raina, R. K. (with Kiryakova, V. S.) On the Weyl fractional operator of two dimensions. **85a:26013**  
On the multiple Weyl fractional integral of a general system of polynomials. (Italian summary) **85m:26009**
- Sawyer, Eric T. A two weight weak type inequality for fractional integrals. **85j:26010**
- Sekine, Tadayuki (with Nishimoto, Katsuyuki) On the orthogonality and norm of fractional differintegrated function  $(e^{a^2 x^2})_\nu$ . **85k:26011**
- Srivastava, Hari M. (with Owa, Shigeyoshi; Nishimoto, Katsuyuki) A note on a certain class of fractional differintegral equations. **85h:26010a**  
See also Nishimoto, Katsuyuki; et al., **85h:26010b**
- Tremblay, R. (with Fugère, B. J.) Expansions of operators related to  $zD$  and the fractional derivative. **85m:26010**
- Uspenskii, K. I. A function and its application to integration and differentiation of fractional order in the Riemann-Stieltjes sense. (Russian) (Not in MR)
- Wheeden, Richard L. See Gatto, Angel E.; et al., **85f:26010**

secondary classifications (26A33)

- Aleroev, T. S. Spectral analysis of a class of nonselfadjoint operators. (Russian) **85h:34031**
- Andersen, Kenneth F. (with Heinig, H. P.) Weighted norm inequalities for certain integral operators. **85f:26012**
- Berger, Marc Aron (with Sloan, Alan D.) Explicit solutions of partial differential equations. **85f:35041**
- Biacino, Loredana (with Miserendino, Doriano) Perturbations of elliptic operators by operators with derivatives of fractional order. (Italian. English summary) **85c:35034**  
(with Miserendino, Doriano) Derivatives of fractional order for  $L^2(\mathbb{R}^2)$  functions and characterization of the spaces  $H^s(\mathbb{R}^2)$ . (Italian. English summary) **85c:46025**  
(with Di Giorgio, Marina; Miserendino, Doriano) Derivatives of fractional order for functions from  $W^s(\Omega)$ . (Italian. English summary) **85g:46037**
- Christ, M. The extension problem for certain function spaces involving fractional orders of differentiability. **85k:46032**
- Conlan, James Hyperbolic differential equations of generalized order. **85j:35123**
- Di Giorgio, Marina See Biacino, Loredana; et al., **85g:46037**
- Dixit, Kaushal Kishore See Vinodkumar; et al., **85a:30031**
- Drianov, D. P. Average modulus of smoothness of fractional index and fractional order derivatives. **85b:26003**
- Heinig, H. P. See Andersen, Kenneth F., **85f:26012**
- Lowndes, J. S. Cauchy problems for second-order hyperbolic differential equations with constant coefficients. **85f:35132**
- Miserendino, Doriano Traces of derivatives of fractional order of  $W^s(\Omega)$  functions in a rectangle. (Italian. English summary) **85g:46038**  
See also Biacino, Loredana, **85c:35034**; Biacino, Loredana, **85c:46025** and **85g:46037**
- Nishimoto, Katsuyuki Tables of fractional differintegrations of elementary functions. **85f:30085**

- See also Vinodkumar; et al., **85a:30031**; Owa, Shigeyoshi, **85j:30020** and Sekine, Tadayuki, **85j:30021**
- Owa, Shigeyoshi An application of the fractional derivative. III. **85c:26020**  
An application of the fractional derivative. II. **85c:26019**  
(with Nishimoto, Katsuyuki) A note on a class of convex functions. **85j:30020**
- Raina, R. K. On composition of certain fractional integral operators. **85h:44009**  
A theorem connecting two-dimensional Weyl operator and  $H$ -function transform. **85m:33005**
- Sekine, Tadayuki (with Nishimoto, Katsuyuki) A note on a close-to-star-like function. **85j:30021**
- Sloan, Alan D. See Berger, Marc Aron, **85f:35041**
- Vinodkumar (with Dixit, Kaushal Kishore; Nishimoto, Katsuyuki) Some applications of fractional calculus. **85a:30031**

### 26A36 Antidifferentiation

- Piquette, Jean C. (with Van Buren, A. L.) Technique for evaluating indefinite integrals involving products of certain special functions. **85k:26012**
- Van Buren, A. L. See Piquette, Jean C., **85k:26012**

secondary classifications (26A36)

- Kar, A. B. See Sarkhel, D. N., **85k:26013**
- Nakagami, Keiko Integration and differentiation of  $\delta$ -function. II. **85c:46032a**  
Integration and differentiation of  $\delta$ -function. III. **85c:46032b**
- Nehrkorn, Klaus Ein Entscheidungsverfahren zur unbestimmten Integration einer Klasse elementar-transzendenten Funktionen als Modifikation eines Verfahrens von Risch. [A decision procedure for symbolic integration of a class of elementary-transcendental functions as modification of a procedure of Risch] **85g:12003**  
Methoden der symbolischen Integration. [Methods of symbolic integration] **85c:85029**
- Sarkhel, D. N. (with Kar, A. B.) (PVB) functions and integration. **85k:26013**
- Schikhof, Wilhelm H.  $C^\infty$ -antiderivatives of  $p$ -adic  $C^\infty$ -functions. **85j:11133**

### 26A39 Denjoy and Perron integrals, other special integrals

- Bullen, P. S. The Burkil approximately continuous integral. II. **85c:26007**
- Isaki, Kanetsiroo An attempt to generalize the Denjoy integration. **85c:26005**
- Jarník, Jiří (with Kurzweil, Jaroslav; Schwabik, Stefan) On Mawhin's approach to multiple nonabsolutely convergent integral. (Russian summary) **85h:26011**
- Kar, A. B. See Sarkhel, D. N., **85k:26013**
- Kuczma, Marek On some properties of Erdős sets. **85j:26011**
- Kurzweil, Jaroslav See Jarník, Jiří; et al., **85h:26011**
- Mukhopadhyay, S. N. See Pal, B. K., **85m:26011**
- Novikov, L. A. The practice of calculation of Hadamard's integral and its applications. (Russian) (See **85k:35001**)
- Pal, B. K. (with Mukhopadhyay, S. N.) The Cesàro-Denjoy-Bochner scale of integration. **85m:26011**
- Pfeffer, Washek Frank The generalized Riemann integral in higher dimensions. **85g:26006**
- Pucci, Patricia Riemann and Burkill-Cesari integrals. (Italian. English summary) **85c:26008**
- Sarkhel, D. N. (with Kar, A. B.) (PVB) functions and integration. **85k:26013**
- Schwabik, Stefan See Jarník, Jiří; et al., **85h:26011**

### 26A42 Integrals of Riemann, Stieltjes and Lebesgue type [See also 28-XX.]

- Korovkin, P. P. On the theory of integral. **85h:26012**

secondary classifications (26A42)

- Bullen, P. S. The Burkil approximately continuous integral. II. **85c:26007**
- Byrnes, J. S. (with Giroux, A.; Shisha, Oved) Riemann sums and improper integrals of step functions related to the prime number theorem. **85f:40002**
- Degani Cattelani, Franca Kernels of "distance" type that soften jumps in one or more variables. (Italian) **85h:41054**
- Giroux, A. See Byrnes, J. S.; et al., **85f:40002**
- Kadets, M. I. See Kadets, V. M., **85k:46010**
- Kadets, V. M. (with Kadets, M. I.) Conditions for convexity of the set of limits of Riemann sums of a vector-valued function. (Russian) **85k:46010**
- Lampshire, Robert L. Elementary proof of a formula of Ramanujan. **85k:33001**
- Matsuura, Shigetake See Yosida, Kōsaku, **85i:44010**
- Shisha, Oved See Byrnes, J. S.; et al., **85f:40002**
- Sjögren, Peter Riemann sums for stochastic integrals and  $L^p$  moduli of continuity. **85c:60060**
- Struble, Raymond A. Series expansions for Fourier transforms and Lebesgue functions. **85k:42025**
- Yosida, Kōsaku (with Matsuura, Shigetake) A note on Mikusiński's proof of the Titchmarsh convolution theorem. **85i:44010**

### 26A45 Functions of bounded variation, generalizations

- Asatiani, V. O. (with Chanturiya, Z. A.) The modulus of variation of a function and the Banach indicatrix. **85c:26006**
- Bullen, P. S. An inequality for variations. **85g:26007**
- Chanturiya, Z. A. See Asatiani, V. O., **85c:26006**
- Russell, Allan M. A generalization of a theorem of F. Riesz. **85a:26014**
- Wang, Si Lei Some properties of functions of  $\Lambda$ -bounded variation. (Chinese) (Not in MR)
- Wu, Cong Xin (with Zhao, Lin Sheng) Functions of bounded variation of order 2 on sequence spaces. I. (Chinese. English summary) **85m:26012**
- Zhao, Lin Sheng See Wu, Cong Xin, **85m:26012**

secondary classifications (26A45)

- Blei, Ron C. Functions of bounded variation and fractional dimension. **85g:43003**  
 Horváth, John The behavior of the Riesz representation theorem with respect to order and topology. **85e:28019**  
 Ko, Ker-I Some negative results on the computational complexity of total variation and differentiation. **85e:68031**  
 Postolická, Vasilie On set functions of bounded slope  $p$ -variation. **85c:28003**

#### 26A46 Absolutely continuous functions

- Ding, Chun Hua The graph of an absolutely continuous function. (Chinese. English summary) **85a:26015**  
 Renzi, Maurizio A remark on absolutely continuous functions with first derivative of bounded variation. (Italian. English summary) **85m:26013**

#### 26A48 Monotonic functions, generalizations

- Andrica, Dorin Monotony preserving through some integral means of Cesàro type. (See **85g:00019**)  
 Lee, Cheng Ming A monotonicity theorem and a Bernoulli-l'Hospital-Ostrowski rule. **85k:26014**  
 Vince, I. On a certain class of multiply monotone and completely monotone function. **85k:26015**  
 Wang, Si Lei Two theorems on monotone functions. (Chinese) (Not in MR)  
 Zhuang, Qi Tai A generalization of a theorem of Borel on monotone functions. **85e:26009**  
 A generalization of a theorem of Borel on monotone functions. (Chinese) (Not in MR)

secondary classifications (26A48)

- Evans, Michael Jon (with Larson, Lee) Qualitative differentiation. **85g:26004**  
 Humke, Paul D. Nowhere monotone functions and a problem of K. M. Garg. **85e:54015**  
 Larson, Lee See Evans, Michael Jon. **85g:26004**  
 Paganoni, Luigi (with Rusconi, Daniela) A characterization of some classes of functions  $F$  of the form  $F(x, y) = g(\alpha f(x) + \beta f(y) + \gamma)$  or  $F(x, y) = \varphi(h(x) + k(y))$ . **85f:39008**  
 Rusconi, Daniela See Paganoni, Luigi. **85f:39008**  
 Szafraniec, F. H. On interpolation of completely monotonic sequences. **85k:41003**  
 Zamfirescu, Tudor Typical monotone continuous functions. **85m:26007**

#### 26A51 Convexity, generalizations

- Esen, Matta A theorem on convex sequences. **85a:26016**  
 Kolmán, Isolf Über die Stetigkeit quasikonvexer Funktionen. [On the continuity of quasiconvex functions] (See **85g:00019**)  
 Leroux, Alain Other determinantal conditions for concavity and quasiconcavity. **85h:26013**  
 Long, Rui Lin A property of convex functions. (Chinese) (Not in MR)  
 A property of convex function. **85m:26014**  
 Mikolás, M. Einige neuere Anwendungen des Konvexitätsbegriffes in den Naturwissenschaften. [Some more recent applications of the concept of convexity in the natural sciences] (Not in MR)  
 Mocanu, Constanta Starshapedness and convexity of weighted means. (See **85g:00019**)  
 Omicini, Jan On some homeomorphisms transforming a denumerable set onto denumerable sets. **85j:26012**  
 Otani, Kiyoshi A characterization of quasiconcave functions. **85g:26008**  
 Pfluger, Albert Über eine die konvexen Kurven kennzeichnende Minimaleigenschaft. [On a minimality property that characterizes convex curves] **85a:26017**  
 Popoviciu, Elena Sur certaines propriétés des fonctions quasi-convexes. I. [On certain properties of quasiconvex functions. I] **85i:26003**  
 Toader, Gh.  $\alpha$ -convex sequences. (See **85g:00019**)  
 Zălinescu, C. On uniformly convex functions. **85a:26018**

secondary classifications (26A51)

- Alcina, Claudi On convex triangle functions. **85f:39009**  
 Costantini, Paolo Some remarks on the existence of monotonic and convex quadratic interpolation splines. (Italian. English summary) **85m:65013**  
 Griewank, A. (with Toint, Ph. L.) On the existence of convex decompositions of partially separable functions. **85f:90088**  
 van Haeringen, H. Convex fuzzy sets, unimodal functions, and inequalities for the logarithmic mean. **85j:03089**  
 Lacković, Ivan B. On the behaviour of sequences of left and right derivatives of a convergent sequence of convex functions. (Serbo-Croatian summary) **85j:26008**  
 Lapidot, Eitan Convexity preserving and predicting by Bernstein polynomials. **85e:41025**  
 Leckband, M. A. An integral inequality with applications. **85g:26018**  
 Nishimoto, Katsuyuki See Owa, Shigeyoshi, **85j:30020** and Sekine, Tadayuki, **85j:30021**  
 Owa, Shigeyoshi (with Nishimoto, Katsuyuki) A note on a class of convex functions. **85j:30020**  
 Petarić, Josip E. On the Petrović inequality for convex functions. (Serbo-Croatian summary) **85e:26023**  
 A simple proof of the Jensen-Steffensen inequality. **85a:26031**  
 See also Vasić, Petar M., **85e:26026**  
 Saburi, Nobuo Inequalities. **85e:26021**  
 Sekine, Tadayuki (with Nishimoto, Katsuyuki) A note on a close-to-star-like function. **85j:30021**  
 Sonnevend, Gy. An optimal sequential algorithm for the uniform approximation of convex functions on  $[0, 1]^2$ . **85k:90124**  
 Szabó, Zoltán István Verschärfungen der Sätze über die Methode der konvexen Berührungsfunktionen ohne Divergenzpunkt. (English and French summaries) [Sharpening of the theorems on the method of convex tangential functions without point of divergence] **85d:65033**

Toader, Gh. A hierarchy of convexity for sequences. **85e:40004**

- Toint, Ph. L. See Griewank, A., **85f:90088**  
 Vasić, Petar M. (with Petarić, Josip E.) Notes on some inequalities for convex functions. **85e:26028**  
 Zhang, Lian Sheng Problems on conjugate functions of nonconvex functions. (Chinese. English summary) **85j:90057**

#### 26A99 None of the above, but in this section

- (Haruki, H.) See Williams, Kenneth S., **85k:26017**  
 (Haruki, S.) See Williams, Kenneth S., **85k:26017**  
 Kosyrev, S. B. Topological density of crinkly functions. (Russian) **85e:26010**  
 Luo, Cheng Zhong (with Wang, De Mou) Extension of the integral of an interval-valued function and the integral of a fuzzy-valued function. (Chinese. English summary) **85k:26016**  
 Stanis, Tadeusz Separable Samuelson functions. (Polish. English and Russian summaries) **85g:26009**  
 Stanković, Bogoljub On the impossibility of extending the product of continuous functions to the field of Mikusiński operators. (Serbo-Croatian summary) **85a:26019**  
 Wang, De Mou See Luo, Cheng Zhong. **85k:26016**  
 Weinberger, H. F. A characterization of the Pólya frequency functions of order 3. **85b:26011**  
 Williams, Kenneth S. Letter to the editor: "Euler's integrals" [Amer. Math. Monthly 90 (1983), no. 7, 464-466; MR 84k:26012], by H. Haruki and S. Haruki. **85k:26017**  
 Zhong, Ren Bao On an algorithm for indefinite integration of rational functions. (Chinese. English summary) **85j:26013**

secondary classifications (26A99)

- de Glas, Michel Invariance and stability of fuzzy systems. **85e:03131**  
 Hirasawa, Yoshiyasu On the construction of linearly independent vectors with variable components. **85d:15026**  
 Ortner, Norbert Eine  $\delta$ -Folge. [A  $\delta$ -sequence] **85b:40047**  
 Paroloe, A. J. An asymptotic form of Cauchy's functional equation. **85c:39007**  
 Pfeffer, Washek Frank Une intégrale riemannienne et le théorème de divergence. (English summary) [A Riemann-type integral and the divergence theorem] **85k:26021**  
 Preston, Chris Iterates of maps on an interval. **85e:58058**

#### 26Bxx Functions of several variables

secondary classifications (26Bxx)

- Valitkil, Yu. N. ★Элементы анализа на многообразиях. (Russian) [Elements of analysis on manifolds] **85g:58001**

#### 26B05 Continuity and differentiation questions

- Aversa, Vincenzo (with Carrese, Rosalba) A universal primitive for functions of many variables. (Italian. English summary) **85b:26012**  
 Carrese, Rosalba See Aversa, Vincenzo. **85b:26012**  
 Ditzian, Z. Moduli of continuity in  $\mathbb{R}^n$  and  $D \subset \mathbb{R}^n$ . **85c:26007**  
 Grande, Zbigniew Les problèmes concernant les fonctions réelles. [Problems concerning real functions] **85a:26020**  
 Deux remarques sur les dérivées partielles. [Two remarks on partial derivatives] **85k:26018**  
 Kulkov, I. V. An extension of generalized derivatives. (Russian) **85m:26015**  
 Russo, Giuseppina On a strong differentiability condition for arbitrary set functions and the summability of strong derivatives. (Italian) **85j:26014**  
 Skórnik, Krystyna On local derivatives. **85j:26015**

secondary classifications (26B05)

- Abdullaev, F. A. Some properties of conjugate functions of two variables in moduli of smoothness. (Russian) **85m:42015**  
 Barsotti, Leo Note on conoids and limits. I. (Portuguese) **85f:51024**  
 Calderón, Calixto P. Lacunary differentiability of functions in  $\mathbb{R}^n$ . **85k:40031**  
 Diaconu, Adrian Sur quelques propriétés des dérivées de type Fréchet d'ordre supérieur. [Some properties of higher-order Fréchet-type derivatives] **85g:46053a**  
 Sur la dérivée de type Fréchet de l'application composée. [Fréchet-type derivative of the composite mapping] **85g:46053b**  
 Sur la dérivée de type Fréchet d'ordre  $n$  de l'application inverse. [The  $n$ -order Fréchet-type derivative of the inverse mapping] **85g:46053c**  
 Liu, Gen Qian The problem of exact and approximate total differentials. (Chinese) **85j:26007**  
 Pawlak, Helena (with Pawlak, Ryszard) On continuity and limit points of  $w$ -Darboux functions. **85b:54020**  
 Pawlak, Ryszard See Pawlak, Helena. **85b:54020**  
 Pu, Huan Wan (with Pu, Hui Min) On the derivatives of interval functions. **85j:26022**  
 Pu, Hui Min See Pu, Huan Wan. **85j:26022**  
 Welland, G. V. Strong differentials in  $L^p$ . **85c:43022**  
 Zajíček, Luděk A note on partial derivatives of convex functions. **85e:26008**

#### 26B10 Implicit function theorems, Jacobians, transformations with several variables

- Abbassov, A. G. Sufficient conditions for homeomorphism of mappings. (Russian. English and Azerbaijani summaries) **85m:26016**  
 Pourclau, B. H. Homeomorphisms and generalised derivatives. **85e:26011**  
 Randall, John D. The real Jacobian problem. **85e:26012**  
 Shen, Zu He A computationally verifiable sufficient condition for a local homeomorphism. (Chinese. English summary) **85a:26021**

- Steffen, Klaus Über den Zwischenwertsatz von Darboux und den Umkehrsatz für differenzierbare Funktionen mehrerer Veränderlicher. [On Darboux's intermediate value theorem and the inverse function theorem for differentiable functions of several variables] 85b:26019
- Zachepa, V. R. Continuation with respect to a parameter of simple solutions. (Russian) 85a:26022

## secondary classifications (26B10)

- Balabanov, V. A. On the theory of implicit functions in pseudotopological vector spaces. (Russian. English summary) 85f:58007
- Miller, John D. Some global inverse function theorems. 85e:58018
- Rabier, Patrick A generalization of the implicit function theorem for mappings from  $\mathbb{R}^{n+1}$  into  $\mathbb{R}^n$  and its applications. 85k:58020
- Rodkina, A. E. An implicit function theorem and the solution of equations of neutral type. (Russian) 85b:34076

## 26B12 Calculus of vector functions

- Chernack, P. A two-variable criterion for extrema with related effective procedure. 85j:26016
- Skórnik, Krystyna On full derivatives. 85e:26013

## secondary classifications (26B12)

- Abels, M. Distributions of electrons on a circle with minimal potential energy. 85g:78010
- Erdélyi, Z. See Kálovics, F., 85i:90123
- Kálovics, F. (with Erdélyi, Z.) On numerical applications of excluding theorems. 85i:90123
- Rodá, G. (with Simons, Stephen) Directional derivatives and variational inequalities. 85f:49029
- Ronga, Felice A new look at Faà de Bruno's formula for higher derivatives of composite functions and the expression of some intrinsic derivatives. 85e:57036
- Simons, Stephen See Rodá, G., 85f:49029
- Waterhouse, William C. Do symmetric problems have symmetric solutions? 85e:57043
- Zhang, Yao Ting Matrix differentials—a tool for deriving exact distributions. (Chinese. English summary) 85g:62066

## 26B15 Integration: length, area, volume [See also 28A75, 51M25.]

- Gulevich, S. A. A sufficient condition for integrability of the Banach indicatrix of a smooth mapping. (Russian) 85e:26014

## secondary classifications (26B15)

- Seymour, P. D. (with Zašlavsky, Thomas) Averaging sets: a generalization of mean values and spherical designs. 85m:05031
- Zašlavsky, Thomas See Seymour, P. D., 85m:05031

## 26B20 Integral formulas (Stokes, Gauss, Green, etc.)

- Betounes, David E. The kinematical aspect of the fundamental theorem of calculus. 85f:26011
- Grunsky, Helmut ★ The general Stokes' theorem. 85j:26017
- Mora, Xavier The divergence theorem. (Catalan) 85k:26020
- Nöbeling, Georg Zur Theorie des Satzes von Stokes. [On the theory of Stokes's theorem] 85a:26023
- Pfeffer, Washek Frank Une intégrale riemannienne et le théorème de divergence. (English summary) [A Riemann-type integral and the divergence theorem] 85k:26021

## 26B25 Convexity, generalizations

- Marcellini, Paolo Quasiconvex quadratic forms in two dimensions. 85j:26018
- Saint-Raymond, Jean Fonctions convexes de première classe. [Convex functions of Baire class one] 85j:26019
- Singh, Chanchal Elementary properties of arcwise connected sets and functions. 85a:26024
- Zajček, Luděk A note on partial derivatives of convex functions. 85e:26006

## secondary classifications (26B25)

- Forcina, Antonio (with Giovagnoli, Alessandra) Homogeneity indices and Schur-convex functions. (French and Italian summaries) 85c:62007
- Giovagnoli, Alessandra See Forcina, Antonio, 85c:62007
- Kostova, V. At. Approximation of nonnegative convex functions by polynomials with positive coefficients in the Hausdorff metric. 85k:41009
- Marques, M. D. P. M. (with Morreau, J.-J.) Isotropie et convexité dans l'espace des tenseurs symétriques. [Isotropy and convexity in the space of symmetric tensors] 85d:15035
- Martínez-Legas, J. E. Exact quasiconvex conjugation. (German summary) 85e:90061
- Morreau, J.-J. See Marques, M. D. P. M., 85d:15035
- Singer, Ivan Conjugate functionals and level sets. 85e:49024

## 26B35 Special properties of functions of several variables, Hölder conditions, etc.

- Ceder, J. Two-dimensional Darboux functions. 85i:26004a  
Addendum: "Two-dimensional Darboux functions". 85i:26004b
- Grande, Zbigniew Sur les classes de Baire des fonctions de deux variables. [The Baire classes of functions of two variables] 85a:26025
- de Haan, Laurens (with Omeij, E.) Integrals and derivatives of regularly varying functions in  $\mathbb{R}^d$  and domains of attraction of stable distributions. II. 85b:26013
- Omeij, E. See de Haan, Laurens, 85b:26013
- Savinov, N. V. On the dimension of projections of compacta, lying in  $\mathbb{R}^n$ , and uniformly separating families of functions. (Russian) 85b:26014

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- Zhang, Jing Zhong (with Yang, Lu) On a criterion for existence and uniqueness of the iterated semigroup. (Chinese. English summary) 85b:26014

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- Chang, Geng Zhe (with Davis, Philip J.) The convexity of Bernstein polynomials over triangles. 85c:41001
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- Hatcher, Theodore R. See Wilkins, J. Ernest, Jr., 85d:26006
- Hinkkanen, A. (with Vaughan, R. C.) An analytic inequality. 85m:26026
- Hong, Yi (with Yang, Hong Cang; Du, Ding Zhu) An inequality for convex functions. 85j:26031
- See also Du, Ding Zhu; et al., (Not in MR)
- Leckband, M. A. An integral inequality with applications. 85g:26018
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- Petarić, Josip E. On some inequalities for functions with nondecreasing increments. 85c:26012
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- Looney, L. Inequalities of Young-type. 85j:26027
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- Moore, R. E. Set valued extensions of integral inequalities. 85h:26010
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## 26E20 Calculus of functions taking values in infinite-dimensional spaces

- Baill, Boris On the indefinite integrals of abstract functions. 85m:26027
- Kowalski, I. K. Averaged modulus in Banach spaces. 85j:26033

secondary classifications (26E20)

- Acerbi, Emilio (with Buttazzo, Giuseppe; Fusco, Nicola) Semicontinuity and relaxation for integrals depending on vector valued functions. 85i:49019
- Buttazzo, Giuseppe See Acerbi, Emilio; et al., 85i:49019
- Fusco, Nicola See Acerbi, Emilio; et al., 85i:49019
- Preis, David Gâteaux differentiable functions are somewhere Fréchet differentiable. 85k:46051

## 26E25 Set-valued functions [See also 54C60.]

- Nikodem, Kazimierz On quadratic set valued functions. 85f:26023

## 26E30 Non-Archimedean analysis [See also 12J25.]

secondary classifications (26E30)

- Matignon, Michel (with Reversat, Marc) Sur les automorphismes continus d'extensions transcendentes valuées. [On the continuous automorphisms of valued transcendental extensions] 85f:12013
- Reversat, Marc See Matignon, Michel, 85f:12013

## 26E35 Nonstandard analysis [See also 03H05.]

secondary classifications (26E35)

- (Alavina, R.) See Uspenskii, V. A., 85d:03001
- Hurd, A. E. Existence of time evolutions of nonequilibrium states in statistical mechanics. 85m:82015
- Kang, Tai See Wang, Ji Wu, 85i:03200
- Levy, Mireille (with Raynaud, Yves) Ultraproductions des espaces  $L^p(L^q)$ . (English summary) [Ultrapowers of  $L^p(L^q)$  spaces] 85i:46044
- (Post, Emil L.) See Uspenskii, V. A., 85d:03001
- Raynaud, Yves See Levy, Mireille, 85i:46044
- Robert, Alain  $\star$  L'analyse non standard. (French) [Nonstandard analysis] 85m:03003
- Stroyan, K. D. Locally convex infinitesimal calculus. II. Computations on Mackey ( $I^\infty$ ). 85d:46099
- Uspenskii, V. A.  $\star$  Нестандартный, или неархимедов, анализ. (Russian) [Nonstandard or non-Archimedean analysis] 85d:03001
- Wang, Ji Wu (with Kang, Tai)  $k$ -stratum limit and  $k$ -stratum integral on the generalized number field. 85i:03200

## 26E99 None of the above, but in this section

- Estrada, Ricardo Existence of smooth functions that are nowhere analytic. (Spanish) 85b:26028
- Evans, Michael Jon Symmetric and smooth functions: a few questions and fewer answers. (See 85g:26001)
- Larson, Lee Symmetric real analysis: a survey. 85f:26024
- Puri, Madan L. (with Ralescu, Dan A.) Differentials of fuzzy functions. 85c:26014
- Ralescu, Dan A. See Puri, Madan L., 85c:26014

secondary classifications (26E99)

- Barnabei, Mariena (with Brini, Andrea; Nicoletti, Giorgio) A general umbral calculus in infinitely many variables. 85g:05025
- Belitskii, G. R. Inequalities of the type of Carleman's inequality. (Russian) 85j:26032
- Brini, Andrea See Barnabei, Mariena; et al., 85g:05025
- van Haeringen, H. Monotonicity, convexity, and analyticity of some triangular norms. 85j:03090
- Khaitov, T. I. See Usmanov, Z. D.; et al., 85a:58055
- Nicoletti, Giorgio See Barnabei, Mariena; et al., 85g:05025
- Saksonov, M. T. See Usmanov, Z. D.; et al., 85a:58055
- Usmanov, Z. D. (with Khaitov, T. I.; Saksonov, M. T.) Evolutionary trajectories of a collection. (Russian. Tajiki summary) 85a:58055

## 28-XX MEASURE AND INTEGRATION (For analysis on manifolds, see 58-XX.)

- Markwardt, Klaus Eine teilweise geordnete Halbstruktur als Ausgangspunkt zur Entwicklung einer Analysis. [A partially ordered semistructure as starting point for the development of an analysis] (Not in MR)

## 28-01 Elementary exposition; textbooks

- Craven, B. D.  $\star$  Lebesgue measure & integral. 85h:28001
- George, Claude  $\star$  Exercices in integration. 85g:28001

secondary classifications (28-01)

- Nikol'skii, S. M.  $\star$  Курс математического анализа. Том II. [Course in mathematical analysis. Vol. II] 85f:00001b

## 28-02 Advanced exposition (research surveys, monographs, etc.)

- Alekzyuk, V. N.  $\star$  Функции множества. (Russian) [Set functions] 85m:28001
- Cutland, N. J. Nonstandard measure theory and its applications. 85b:28001
- Kharasishvili, A. B.  $\star$  Инвариантные продолжения меры Лебега. (Russian) [Invariant extensions of the Lebesgue measure] 85i:28001

## 28-03 Historical (must also be assigned at least one classification number from Section 01)

secondary classifications (28-03)

- Lo Bello, Anthony On the origin and history of ergodic theory. 85c:01002
- Medvedev, F. A. Two proofs of the finite covering theorem. (Russian. English summary) 85g:01019
- Viola, Tullio Guido Fubini's contribution to the development of the concept of integral. (Italian) 85i:01023

## 28-06 Proceedings, conferences, etc.

- (Kislow, D.) See Measure theory, 85m:28002
- (Maharam, D.) See Measure theory, 85m:28002
- Conference:  
Measure theory  $\star$  Measure theory, Oberwolfach 1983. 85m:28002  
Measure theory  $\star$  Measure theory, Oberwolfach 1983. 85m:28002  
Oberwolfach  $\star$  Measure theory, Oberwolfach 1983. 85m:28002

secondary classifications (28-06)

- Santa Barbara, Calif.  $\star$  Seventh symposium on real analysis. 85g:28001
- Symposium:  
Real analysis  $\star$  Sixth summer symposium on real analysis. 85d:00028
- Waterloo, Ont.  $\star$  Sixth summer symposium on real analysis. 85d:00028

## 28Axx Classical measure theory

### 28A05 Classes of sets (Borel fields, $\sigma$ -rings, etc.), measurable sets, Suslin sets, analytic sets [See also 04A15, 26A21, 54H05.]

- Arias de Reyna Martínez, Juan Some results connected with a problem of Erdős. III. 85d:28001
- Cater, F. S. A partition of the unit interval. 85m:28003
- Ceder, J. (with Ganguly, D. K.) On projections of big planar sets. 85g:28002
- Datta, Jayantakumar Generalisation of a theorem of J. J. Schäfer. 85h:28002
- Diamond, Harvey (with Gellé, Gregory) Relations among some classes of subsets of  $\mathbb{R}$ . 85a:28001
- Droste, Manfred On an extendability problem for measures. 85j:28001
- Ganguly, D. K. See Ceder, J., 85g:28002
- Gellé, Gregory See Diamond, Harvey, 85a:28001
- Kelár, Václav On the first and the fifth class of Zahoráki. 85h:28003
- Kharasishvili, A. B. The continuum hypothesis and some questions of measure theory. (Russian. English and Georgian summaries) 85h:28004
- Kominek, Z. Measure, category, and the sums of sets. 85d:28002
- Maritz, P. On a projection theorem for multifunctions. 85b:28002
- Miller, Harry I. An incompatibility theorem. 85k:28001
- Morgan, John C., II On the Borel  $\sigma$ -field and the Baire property. 85c:28001
- Navara, Mirko (with Pták, Pavel) On the Radon-Nikodým property for  $\sigma$ -classes. 85b:28003
- Pták, Pavel See Navara, Mirko, 85b:28003
- Rutkowski, Aleksander On axiomatization of the concept of measurable function. 85c:28002
- Sander, W. Applications of certain  $\mathfrak{A}$ -families. 85i:28002
- Simson, Andrew On two halves being two wholes. 85g:28003
- von Weissäcker, Heinrich Exchanging the order of taking suprema and countable intersections of  $\sigma$ -algebras. (French summary) 85c:28001

secondary classifications (28A05)

- Censor, Douglas (with Mauldin, R. Daniel) Borel equivalence and isomorphism of coanalytic sets. 85f:04002
- Croft, H. T. Three lattice-point problems of Steinhaus. 85g:11051
- Erdős, Paul (with Kunen, Kenneth; Mauldin, R. Daniel) Some additive properties of sets of real numbers. 85f:04003
- Falconer, K. J. Rings of fractional dimension. 85m:28004
- González Díaz, María Luisa See Obaya García, Rafael, 85j:48044
- Hansell, R. W. (with Jayne, J. E.; Rogers, C. A.)  $K$ -analytic sets. 85b:54039



- Hereditarily additive families in descriptive set theory and Borel measurable multimap. 85b:54000
- Jayne, J. E. See Hansell, R. W.; et al., 85b:54009
- Kunen, Kenneth See Erdős, Paul; et al., 85f:04003
- Mauldin, R. Daniel See Cesar, Douglas, 85f:04003 and Erdős, Paul; et al., 85f:04003
- Obaya García, Rafael (with González Díaz, María Luisa) Families of Borel sets in a compact set. (Spanish. English summary) 85j:48044
- Ricceri, Biagio Lifting theorems for real functions. 85j:54015
- Rogers, C. A. See Hansell, R. W.; et al., 85b:54009
- Shelah, Saharon Lifting problem of the measure algebra. 85b:03093
- Skala, Heinz J. Some problems of measure theory which are related to economic theory. 85h:90007
- Stern, Jacques On Lusin's restricted continuum problem. 85h:03051
- Szász-Felten, Imre Ein einheitliches Mass zur Darstellung der Operatoren  $T^m$  in einem vektoriellen  $L^1$ -Raum. (Romanian summary) [A uniform measure for the representation of the operators  $T^m$  in a vectorial  $L^1$ -space] (Not in MR)
- Tall, Franklin D. Applying set theory to measure theory. 85e:03116
- Wojtas, Tomasz Projective sets. (Polish) 85g:03073
- Xenikakis, P. J. Small sets in the sense of similarity. II. (Serbo-Croatian summary) 85h:04003
- Small sets in the sense of similarity. I. (Serbo-Croatian summary) 85k:04002

## 28A10 Real- or complex-valued set functions

- Barone, E. Codomain of finite measures and masses. (Italian. English summary) 85e:28003
- Kalaš, Josef Construction of a semiadditive measure on Borel sets of the real line. (Russian. English and Slovak summaries) 85c:28002
- Margulio, G. A. Finitely-additive invariant measures on Euclidean spaces. 85g:28004
- Postolický, Václav On set functions of bounded slope  $p$ -variation. 85c:28003

### secondary classifications (28A10)

- Calude, Cristian (with Calude, Elena) On some discrete metrics. 85f:54057
- Calude, Elena See Calude, Cristian, 85f:54057
- Chiffi, Antonio (with Zirello, Giancarlo) Hausdorff measure and approximating measures. (Italian) 85d:28009
- Hao, Bai Lin See Hu, Gang, 85i:58089
- Hu, Gang (with Hao, Bai Lin) A scaling relation for the Hausdorff dimension of the limiting sets in 1-dimensional mappings. 85i:58089
- Kruszyński, Paweł Nonlinear integration and signed measures on von Neumann algebras. 85d:46068
- Marutyan, E. S. On the  $n$ -core of the sum of cooperative games with a continuum of players. (Russian. Armenian summary) 85b:90097
- Ricceri, Biagio Carathéodory's selections for multifunctions with nonseparable range. 85f:49030
- Zirello, Giancarlo See Chiffi, Antonio, 85d:28009

## 28A12 Contents, measures, outer measures, capacities

- Falconer, K. J. Rings of fractional dimension. 85m:28004
- Ferns, C. On the range of purely atomic probability measures. 85k:28002
- Oberlin, Daniel M. Sums with curves. 85k:28003
- Ochur, A. I. Regularity of  $N$ -triangular set functions. (Russian) 85f:28001
- Sapounakis, A. (with Sion, M.) On generation of Radon-like measures. 85g:28005
- Savčev, L. Ya. Extension of outer measures and measures. 85h:28005
- Sion, M. See Sapounakis, A., 85g:28005

### secondary classifications (28A12)

- Bellay, Jean-Marc Finitely additive measures from positive definite functions. 85i:43014
- Frederickson, Paul (with Kaplan, James L.; Yorke, Ellen D.; Yorke, James A.) The Liapunov dimension of strange attractors. 85b:58078
- Granič, Peter On subspaces of replete and measure replete spaces. 85b:28006
- Kahane, J.-P. Points multiples des processus de Lévy symétriques stables restreints à un ensemble de valeurs du temps. [Multiple points of stable symmetric Lévy processes restricted to a set of time values] 85b:60070
- Kaplan, James L. See Frederickson, Paul; et al., 85b:58078
- Louveau, Alain Effective construction of measures. 85b:28013
- Lowen, Robert Compactness properties in the fuzzy real line. 85j:54009
- Maharam, D. On positive operators. 85e:47044
- Mas'ya, V. G. (with Pinnazarov, S. P.) Estimates for capacities and traces of potentials. 85f:31017
- Mincer, Bohdan On  $GL(n, \mathbb{R})$ -stable measures. 85a:60020
- Pinnazarov, S. P. See Mas'ya, V. G., 85f:31017
- Prasad, V. S. Sous-groupes libres et sous-ensembles indépendants de transformations préservant la mesure. [Free subgroups and independent subsets of measure-preserving transformations] 85g:28023
- Ramsey, L. Thomas On divergent lacunary trigonometric series. 85h:42015
- Savast'yanov, E. A. Multidimensional variations of sets and their contingencies. (Russian. English summary) 85m:28008
- Simoeson, Andrew On two halves being two wholes. 85g:28003
- Yorke, Ellen D. See Frederickson, Paul; et al., 85b:58078
- Yorke, James A. See Frederickson, Paul; et al., 85b:58078

## 28A15 Abstract differentiation theory, differentiation of set functions

[See also 26A24.]

- de Guzmán, Miguel Some results and open problems in differentiation of integrals. 85f:28002
- Liu, Gen Qian The problem of exact and approximate total differentials. (Chinese) 85j:28003

## 28A20 Measurable and nonmeasurable functions, sequences of measurable functions, modes of convergence

- Balder, E. J. An extension of the essential supremum concept with applications to normal integrands and multifunctions. 85c:28004
- A unifying note on Fatou's lemma in several dimensions. 85f:28003
- Benítez, Carlos Change of variable in the Riemann integral: an example. (Spanish. English summary) 85j:28003
- Hu, Tian You (with Liu, Liang Shen) Weak convergence of measures on the continuous function spaces. 85e:28004
- Liu, Liang Shen See Hu, Tian You, 85e:28004
- Rana, Inder K. A Pompeiu problem for locally-finite measures on  $\mathbb{R}^n$ . 85e:28005
- Simons, Stephen Measurable relations, pentagonal arrays and the determinants of probabilistic integrals. 85k:28004
- Ślepak, Włodzisław Sur les fonctions sup-mesurables. (Russian summary) [Sup-measurable functions] 85e:28006a
- Une condition équivalente à la mesurabilité d'une fonction de deux variables. (Russian summary) [A condition equivalent to the measurability of a function of two variables] 85e:28006b
- Some conditions for the measurability of a function of two real variables. (Russian) 85e:28006c
- Measurability of a function of several variables. (Russian) 85e:28006d
- Smolenski, W. Linear Lusin-measurable functionals in case of a continuous cylinder measure. (French summary) 85k:28005
- Wagner-Bojakowska, Elżbieta (with Wilczyński, Władysław) Remarks on the convergence in measure. (Russian and Polish summaries) 85k:28006
- Wilczyński, Władysław See Wagner-Bojakowska, Elżbieta, 85k:28006
- Woźniakowska, Anna On the convergence in measure of nets of monotone functions. (Russian and Polish summaries) 85k:28007

### secondary classifications (28A20)

- Argyros, Spiros A. On the space of bounded measurable functions. 85d:46032
- Rani, S. (with Heath, David C.) On means with countably additive continuities. 85f:46089
- Gurdial On measurable solutions of a functional equation and its application to information theory. 85i:39009
- Heath, David C. See Dubins, Lester E., 85f:46089
- Levi, S. (with Maitra, Ashok) Borel measurable images of Polish spaces. 85m:54041
- Levin, V. L. Measurable utility theorems for closed and lexicographic preference relations. (Russian) 85c:90010
- Maitra, Ashok See Levi, S., 85m:54041
- Matsuda, Minoru On Sierpiński's function and its applications to vector measures. 85i:46057
- Skala, Heinz J. Some problems of measure theory which are related to economic theory. 85h:90007
- Tarasenko, A. A. Limit values of multiplicative integrals. (Russian) 85g:47056
- Tomm, Ludwig (with Trautner, R.) A universal power series for approximation of measurable functions. 85c:30004
- Trautner, R. See Tomm, Ludwig, 85c:30004
- Viertel, Reinhard Borel semigroups and probabilities. 85k:60019

## 28A25 Integration with respect to measures and other set functions

- Kindler, J. A simple proof of the Daniell-Stone representation theorem. 85a:28002
- Navara, Mirko Two-valued states on a concrete logic and the additivity problem. (Russian summary) 85m:28005

### secondary classifications (28A25)

- Alekzyuk, V. N. ★ Функции множеств. (Russian) [Set functions] 85m:28001
- Gerasimenko, T. S. Estimation of the accuracy of approximation of an integral in a Hilbert space by multiple integrals. (Russian) 85f:41014
- Korovkin, P. P. On the theory of integral. 85h:26012
- Navara, Mirko (with Pták, Pavel) On the Radon-Nikodým property for  $\sigma$ -classes. 85b:28003
- Pták, Pavel See Navara, Mirko, 85b:28003

## 28A33 Spaces of measures, convergence of measures [See also 46E27, 60Bxx.]

- Chaurasia, A. R. Compactness criteria for a family of measures on a separable Banach space. 85k:28008
- Komjáth, Péter A continuous generalization of the transversal property. 85h:28006
- Robertson, A. P. (with Thornett, M. L.) On translation-bounded measures. 85m:28006
- Thornett, M. L. See Robertson, A. P., 85m:28006

### secondary classifications (28A33)

- Alsami, D. (with Kartashov, N. V.) Ergodicity and stability of Markov chains with respect to operator topologies in a space of transition kernels. (Russian. English summary) 85c:60110
- Kartashov, N. V. See Alsami, D., 85c:60110
- Matsuoka, Cho-ichiro Comparison of measures on the maximal ideal space of  $H^\infty(W)$  with applications to the Dirichlet problem. 85e:46022
- Neuhoff, D. L. (with Shields, P. C.) Channel distances and representation. 85i:94015
- Shields, P. C. See Neuhoff, D. L., 85i:94015
- Štěpáň, Josef A noncompact Choquet theorem. 85h:46023
- Wheeler, R. F. A survey of Baire measures and strict topologies. 85b:46035

## 28A35 Measures and integrals in product spaces

- Armstrong, Thomas E. (with Priky, Karel) Singularity and absolute continuity with respect to strategic measures. 85b:28004
- Chivukula, Ramamohana Rao (with Sastry, A. S.) Product vector measures via Bartle integrals. 85b:28007
- Eshov, M. P. On constructions of measures with the help of transition kernels. 85b:28005
- Johnson, Gerald W. An unsymmetric Fubini theorem. 85f:28004
- Kellhauer, Guillermo G. R. Generalization of the Fubini theorem in Riemannian manifolds. (Spanish. English summary) 85j:28004
- Priky, Karel See Armstrong, Thomas E., 85b:28004
- Sastry, A. S. See Chivukula, Ramamohana Rao, 85b:28007
- Shortt, Rae Michael Combinatorial methods in the study of marginal problems over separable spaces. 85g:28006

## secondary classifications (28A35)

- Boman, Jan On the closure of spaces of sums of ridge functions and the range of the X-ray transform. (French summary) 85j:44002
- Dunford, Nelson Some Fubini theorems. 85a:28011

## 28A50 Integration and disintegration of measures

- Blackwell, David (with Maitra, Ashok) Factorization of probability measures and absolutely measurable sets. 85j:28005
- Maitra, Ashok See Blackwell, David, 85j:28005

## secondary classifications (28A50)

- Babiker, A. G. A. G. (with Graf, Siegfried) Homomorphism-compact spaces. 85a:28009
- Graf, Siegfried See Babiker, A. G. A. G., 85a:28009
- Johnson, Gerald W. An unsymmetric Fubini theorem. 85f:28004
- Kadane, Joseph B. See Schervish, Mark J.; et al., 85m:60005
- Ma, Zhi Ming A note on random integral measures. (Chinese) 85g:60060
- Matsumoto, Shigeki Orbital decompositions of invariant distributions on a locally compact zero-dimensional space. 85c:22013
- Neumann, Michael Mathias Flows in infinite networks. 85k:90076
- Schervish, Mark J. (with Seidenfeld, T.; Kadane, Joseph B.) The extent of nonconglomerability of finitely additive probabilities. 85m:60005
- Seidenfeld, T. See Schervish, Mark J.; et al., 85m:60005
- Weis, Lutz W. A note on diffuse random measures. 85d:60096

## 28A51 Lifting theory [See also 46G15.]

- Lots, Heinrich P. Measurable cross sections. 85e:28007
- Rodenhausen, Hermann A characterization of nonstandard liftings of measurable functions and stochastic processes. 85h:28008

## secondary classifications (28A51)

- Babiker, A. G. A. G. (with Graf, Siegfried) Homomorphism-compact spaces. 85a:28009
- Graf, Siegfried See Babiker, A. G. A. G., 85a:28009
- Kupka, Joseph (with Priky, Karel) Translation-invariant Borel liftings hardly ever exist. 85d:46061
- (with Priky, Karel) The measurability of uncountable unions. 85g:28015
- Priky, Karel See Kupka, Joseph, 85d:46061 and 85g:28015

## 28A60 Measures on Boolean rings, measure algebras [See also 54H10.]

- Bachman, G. (with Stratigos, Panagiotis D.) A general measure decomposition theorem by means of the generalized Wallman remainder. 85f:28005
- Graf, Siegfried (with Mägerl, G.) Isometries of measure algebras. 85k:28009
- Grassl, Peter On subspaces of replete and measure replete spaces. 85b:28006
- Kalton, N. J. (with Roberts, James W.) Uniformly exhaustive submeasures and nearly additive set functions. 85f:28006
- Mägerl, G. See Graf, Siegfried, 85k:28009
- Roberts, James W. See Kalton, N. J., 85f:28006
- Stratigos, Panagiotis D. See Bachman, G., 85f:28005
- Vladimirov, D. A. On the question of metric independence of subalgebras and random variables. (Russian) 85m:28007

## secondary classifications (28A60)

- Armstrong, Thomas E. Finitely additive  $F$ -processes. 85a:60052
- Gołdštejn, B. G. Decomposition of logics. (Russian) 85f:81007

28A75 Length, area, volume, other geometric measure theory  
[See also 26B15, 49F20.]

- Borsuk, Karol An alternative concept of the  $n$ -dimensional measure. 85a:28003
- Falconer, K. J. On a problem of Erdős on sequences and measurable sets. 85e:28008
- Marion, Jacques Dimension de Hausdorff d'une courbe circulaire simple de von Koch. [Hausdorff dimension of a tame circular curve of von Koch] 85b:28009
- Mattila, Pertti Hausdorff dimension and capacities of intersections of sets in  $n$ -space. 85g:28007
- Poplavskaya, G. Ya. Generalization of the notion of Geöcze surface area to the case of a hypersurface. (Russian) 85f:28007
- Sevast'yanov, E. A. Multidimensional variations of sets and their contingencies. (Russian. English summary) 85m:28008
- Zähle, U. Sets and measures of fractional dimension. (German and Russian summaries) 85m:28009

## secondary classifications (28A75)

- Grassberger, P. On the fractal dimension of the Hénon attractor. 85h:58104
- Hill, Theodore P. Determining a fair border. 85b:28007
- Letac, Gérard Mesures sur le cercle et convexes du plan. [Measures on the circle and convex sets in the plane] 85j:52003
- Lots, Heinrich P. Measurable cross sections. 85e:28007
- Manning, Anthony The dimension of the maximal measure for a polynomial map. 85i:38068
- Oberlin, Daniel M. Sums with curves. 85k:28003
- Tél, Tamás Fractal dimension of the strange attractor in a piecewise linear two-dimensional map. 85h:58108

## 28A99 None of the above, but in this section

- Brown, Gavin (with Williamson, John Hunter) Rearranging measures. 85e:28009
- Komjáth, Péter Large sets not containing images of a given sequence. 85d:28003
- Sevast'yanov, E. A. See Zhdanov, A. N., 85h:28010
- Sitarum, Alladi Fourier analysis and determining sets for Radon measures on  $\mathbb{R}^n$ . 85k:28010
- Szkoplińska, Bożena On the Marczewski function. (Russian summary) 85e:28010
- Wang, Ge Ping Fuzzy  $\sigma$ -algebras and fuzzy measure spaces. (Chinese) (Not in MR)
- Fuzzy  $\sigma$ -algebras and fuzzy measurable spaces. (Chinese. English summary) 85a:28004
- Williamson, John Hunter See Brown, Gavin, 85e:28009
- Zhdanov, A. N. (with Sevast'yanov, E. A.) Approximation and differential properties of measurable sets. (Russian) 85h:28010

## secondary classifications (28A99)

- Bartoszyński, Tomek Additivity of measure implies additivity of category. 85b:03083
- Cox, G. V. A universal null graph whose domain has positive measure. 85b:04002
- Dubois, Didier (with Prade, Henri) Twofold fuzzy sets: an approach to the representation of sets with fuzzy boundaries based on possibility and necessity measures. (Chinese summary) 85d:03108
- Gudder, Stanley P. An extension of classical measure theory. 85d:81014
- Kolyada, V. I. On the metric Darboux property. (Russian. English summary) 85g:28002
- Pelc, Andrzej Combinatorics on  $\sigma$ -algebras and a problem of Banach. 85m:03033
- Prade, Henri See Dubois, Didier, 85d:03108
- Rogalewicz, Vladimir Remarks about measures on orthomodular posets. (Russian summary) 85h:06022
- Srivatas, V. V. Measure and category approximations for  $C$ -sets. 85e:04004
- Yanagi, Mariko Definability in the abstract theory of integration. 85k:03043
- Yeadon, F. J. Finitely additive measures on projections in finite  $W^*$ -algebras. 85i:46087

## 28Bxx Measures and integrals with values in abstract spaces

## 28B05 Vector-valued measures and integrals [See also 46G10.]

- Diestel, Joe (with Uhl, J. Jerry, Jr.) Progress in vector measures—1977–83. 85g:28008
- Dunford, Nelson Some Fubini theorems. 85e:28011
- Gołbiewski, Tomasz On solutions of some generalization of a differential equation. 85g:28009
- Heinich, Henri Mesures vectorielles dans les espaces réticulés. (English summary) [Vector measures in lattice spaces] 85e:28012
- Hill, Theodore P. Determining a fair border. 85b:28007
- Kosiński, W. (with Szczyński, T.) Convergence theorems for integrals with respect to nonlinear operator measures. 85a:28005
- Okada, Susumu Integration of vector valued functions. 85g:28010
- Palle, Shrivappa Veerappa See Panchapagesan, T. V., 85e:28013
- Panchapagesan, T. V. (with Palle, Shrivappa Veerappa) On vector lattice-valued measures. I. 85e:28013
- Ricker, Werner Criteria for closedness of vector measures. 85e:28005
- Samet, Dov Vector measures are open maps. 85m:28010
- Sentilles, Dennis Decomposition of weakly measurable functions. 85b:28008
- Szczyński, T. See Kosiński, W., 85a:28005
- Taguchi, Yoshiko A generalization of the Bochner integral by the method of ranked spaces. 85k:28011
- Toussani, A. Théorème de Radon-Nikodym approximatif pour une mesure finiment additive à valeurs dans un Hilbert. [An approximate Radon-Nikodym theorem for a finitely additive measure with values in a Hilbert space] 85k:28012
- Turpin, Ph. On the range of atomless vector measures. 85e:28014
- Uhl, J. Jerry, Jr. See Diestel, Joe, 85g:28008
- Valadier, M. Une mesure vectorielle sans atomes dont l'ensemble des valeurs est non convexe. [An atomless vector measure with a nonconvex set of values] 85k:28013
- Weber, Hans Stetigkeit, Zerlegung und Wertebereich von Vektormaßen. [Continuity, decomposition and range of vector measures] 85h:28011

## secondary classifications (28B05)

- Aló, R. A. (with Alva, T.; de Korvin, A.; Graham, G.) A bang-bang type theorem for measures. 85e:49015
- Alva, T. See Aló, R. A.; et al., 85e:49015
- Antoniuk, Piotr (with Swartz, Charles) A theorem on matrices and its applications in functional analysis. 85k:46052
- Anzellotti, Gabriele Pairings between measures and bounded functions and compensated compactness. 85m:46042
- Chang, Derek K. (with Rao, M.-M.) Bimeasures and sampling theorems for weakly harmonizable processes. 85f:60055
- Choy, Stephen T. L. Weakly compact operators and multipliers on  $C_0(S, A)$ . 85g:47044
- Dinh Quang Lu'u On convergence of vector-valued amarts of finite order. 85b:60050

- Drewnowski, Lech Boundedness of vector measures with values in the spaces  $L_0$  of Bochner measurable functions. **85f:46065**
- Eggs, L. Convergence of adapted sequences with values in a Banach or Fréchet space. **85b:60061**
- The dual of  $L^1(\mu)$ , with  $\mu$  a vector measure. **85k:46026**
- Graham, G. See Aló, R. A.; et al., **85c:46015**
- Graves, W. H. (with Wheeler, R. F.) On the Grothendieck and Nikodým properties for algebras of Baire, Borel and universally measurable sets. **85i:46056**
- Gullashev, A. Estimates for the Pettis integral in interpolation spaces with some applications. **85d:46090**
- Johnson, Gerald W. (with Skoug, D. L.) Notes on the Feynman integral. II. **85k:81070b** (with Skoug, D. L.) Notes on the Feynman integral. I. **85k:81070a** (with Skoug, D. L.) Notes on the Feynman integral. III. The Schrödinger equation. **85k:81070c**
- Klavinskii, Igor Vector-valued polymeasures and perturbations of semigroups of operators. (See **85g:35003**)
- de Korvin, A. See Aló, R. A.; et al., **85c:46015**
- Marques, M. D. P. M. Produit de comesses sur un localement compact et définition d'un espace hilbertien de mesures bornées. [Comesure product on a locally compact space and definition of a Hilbert space of bounded measures] **85e:46021**
- Murugas, Roderic Rank of positive matrix measures. **85c:47023**
- Nisim, Hannu Orthogonally scattered dilations of finitely additive vector measures with values in a Hilbert space. **85h:46066**
- Obba, Sachio Integration with respect to vector measures. II. (Japanese summary) **85g:46054**
- Rao, M. M. See Chang, Derek K., **85f:60055**
- Rosenberg, Milton Quasi-isometric dilations of operator-valued measures and Grothendieck's inequality. **85a:46023**
- Explicit structure of the 2-majorant of an operator-valued measure in a special case. **85a:47027**
- Rues, Wolfgang The space of countably additive compact range vector measures. **85k:46025**
- Sentilles, Dennis (with Wheeler, R. F.) Pettis integration via the Stonian transform. **85c:28006**
- Siglini, Kenny Koffi Quelques résultats sur les applications vectorielles  $\sigma$ -régulières. (English summary) [Some results about  $\sigma$ -smooth vector mappings] **85i:46058**
- Skoug, D. L. See Johnson, Gerald W., **85k:81070a**; Johnson, Gerald W., **85k:81070b** and **85k:81070c**
- Swartz, Charles A lemma of Labuda as a diagonal theorem. (Russian summary) **85e:28018**
- Integrating bounded functions for the Dobrakov integral. (Russian summary) **85h:46040**
- See also Antosik, Piotr, **85k:46052**
- Tsuman, Yair A characterization of vector measure games in pNA. **85g:90133**
- Truong-Van, B. Autoreproducing kernel moduli of spectral measures and Hellinger integrals—applications to stationary processes. **85d:60062**
- Volkmer, Hans Stetige Erweiterung von Operatoren und der Darstellungssatz von Riesz. [Continuous extension of operators and the representation theorem of Riesz] **85g:47046**
- von Weizsäcker, Heinrich Orthogonale Übergangskerne. [Orthogonal transition kernels] **85g:60007**
- Wheeler, R. F. See Sentilles, Dennis, **85c:28006** and Graves, W. H., **85i:46056**
- Zhao, Zhong Xin Gaussian measures on product Banach spaces. (Chinese) **85h:60066**
- 28B10 Group- or semigroup-valued measures and integrals**
- Alyakin, V. A. Nikodým's theorem for multivalued set functions. (Russian) **85e:28015**
- Fox, Geoffrey (with Morales, P.) Extension of group-valued set functions defined on lattices. **85m:28011**
- Lipecki, Z. Completion of additive set functions with values in a uniform semigroup. (Serbo-Croatian summary) **85b:28009**
- Conditional and simultaneous extensions of group-valued quasimeasures. (Serbo-Croatian summary) **85j:28006**
- Lipovan, O. A Vitali-Hahn-Saks theorem for  $\Delta$ -additive set-valued functions. (Romanian summary) **85j:28007**
- de Lucia, Anna Bruna D'Andrea (with de Lucia, Paolo) A decomposition theorem for functions with values in a topological group. (Italian) **85e:28016**
- de Lucia, Paolo See de Lucia, Anna Bruna D'Andrea, **85e:28016**
- de María González, José L. Sur la régularité d'une mesure à valeurs dans un semigroupe. [Regularity of a measure with values in a semigroup] **85g:28011**
- Morales, P. See Fox, Geoffrey, **85m:28011**
- Pakhaev, B. V. Uniform boundedness of a family of weakly regular nonadditive mappings. (Russian) **85a:28006**
- Šipol, Ján Extension of measure-like set functions. (Russian and Czech summaries) **85e:28017**
- Swartz, Charles A lemma of Labuda as a diagonal theorem. (Russian summary) **85e:28018**
- secondary classifications (28B10)
- Bachman, G. (with Stratigos, Panagiotis D.) Lattice repleteness and some of its applications to topology. **85m:54020**
- Ochur, A. L. Regularity of  $N$ -triangular set functions. (Russian) **85f:28001**
- Riečanová, Z. Regularity of semigroup-valued set functions. (Russian summary) **85h:28035**
- Stratigos, Panagiotis D. See Bachman, G., **85m:54020**
- 28B15 Measures and integrals with values in general ordered systems**
- Pavlaas, Panagiotis K. On the atomic structure and the range of partially ordered convex cone-valued measures. **85g:28012**
- On integration in partially ordered groups. **85d:28004**
- secondary classifications (28B15)
- Graves, W. H. (with Wheeler, R. F.) On the Grothendieck and Nikodým properties for algebras of Baire, Borel and universally measurable sets. **85i:46056**
- Jurek, Zbigniew J. Remarks on  $V$ -decomposable measures. (Russian summary) **85c:60004**
- Lipecki, Z. Maximal-valued extensions of positive operators. **85k:47070**
- Wheeler, R. F. See Graves, W. H., **85i:46056**
- 28B20 Set-valued measures; integration of set-valued functions; measurable selections** [See also 54C60, 54C65.]
- Andrus, Gary F. (with Brown, Leon) Measurable extension theorems. **85h:28012**
- Bouras, A. Comparaison de fonctionnelles intégrales sur les sélections d'une multiapplication mesurable. III. Conditions de croissance et semi-continuité forte et en mesure d'une fonctionnelle intégrale. [Comparison of integral functionals on selections of a measurable multifunction. III. Conditions of growth and of strong semicontinuity and semicontinuity in measure of an integral functional] **85f:28008**
- Brown, Leon See Andrus, Gary F., **85h:28012**
- Castaing, Charles Un résultat d'existence de sélection mesurable et compacité forte de l'intégrale d'une multiapplication dans un Banach non nécessairement séparable. [An existence result for measurable selection and strong compactness of the integral of a multifunction in a not necessarily separable Banach space] **85d:28005a**
- Un résultat d'existence de sélection mesurable et compacité forte de l'intégrale d'une multiapplication dans un Banach non nécessairement séparable. (English summary) [An existence result for measurable selection and strong compactness of the integral of a multifunction in a not necessarily separable Banach space] **85d:28005b**
- Gogouade, D. F. Integrals of set functions with an infinite number of arguments. (Russian) **85j:28008**
- Hudzik, Henryk (with Musielak, Julian; Urbanski, Ryszard) A totally nonatomic set-valued measure. **85k:28014**
- Lipovan, O. On the  $\Omega$ - $F$ -submeasurability of multivalued maps. (Romanian. French summary) **85b:28010**
- A Vitali theorem for sequences of multivalued mappings. (Romanian. French summary) **85h:28013**
- Musielak, Julian See Hudzik, Henryk; et al., **85k:28014**
- Polovinkin, E. S. The integration of multivalued mappings. (Russian) **85a:28007**
- Preocupanu, Anca-Maria On the set-valued additive and subadditive functions. **85f:28009**
- Srivatsa, V. V. Existence of measurable selectors and parametrizations for  $G_\delta$ -valued multifunctions. **85k:28015**
- Urbanski, Ryszard See Hudzik, Henryk; et al., **85k:28014**
- Valadier, M. La multiapplication médianes conditionnelles. [The conditional median multifunction] **85b:28011**
- Wang, Pei Zhuang Hyper- $\sigma$ -fields and measurability of set-valued mappings. (Chinese) (Not in MR)
- Weber, Hans Topological Boolean rings. Decomposition of finitely additive set functions. **85f:28010**
- secondary classifications (28B20)
- Artstein, Zvi Distributions of random sets and random selections. **85m:60017**
- Asoff, Edward A. Borel maps on sets of von Neumann algebras. **85h:46089**
- Balder, E. J. An extension of the essential supremum concept with applications to normal integrands and multifunctions. **85c:28004**
- Christensen, Jens Peter Reus (with Kenderov, Pet'ar S.) Dense strong continuity of mappings and the Radon-Nikodým property. **85k:46015**
- Ioffe, A. D. Single-valued representation of set-valued mappings. II. Application to differential inclusions. **85b:49017**
- Isac, George Sur l'existence de l'optimum de Pareto. [On the existence of the Pareto optimum] **85k:90041**
- Kenderov, Pet'ar S. See Christensen, Jens Peter Reus, **85k:46015**
- Kiel, Helms-Albrecht Le théorème de Radon-Nikodým pour des multi-mesures à valeurs faiblement compactes. (English summary) [The Radon-Nikodým theorem for set-valued measures having weakly compact values] **85f:46096**
- Kupka, Joseph (with Priky, Karel) The measurability of uncountable unions. **85g:28015**
- Matsuda, Minoru On Sierpiński's function and its applications to vector measures. **85i:46057**
- Priky, Karel See Kupka, Joseph, **85g:28015**
- Spahn, B. S. A representation theorem for compact-valued multifunctions. **85i:54020**
- 28B99 None of the above, but in this section**
- de María González, José L. A characterization theorem for L.C.S. valued functions. **85m:28012**
- secondary classifications (28B99)
- Blondia, C. The Radon-Nikodým property in locally convex spaces. **85i:46002**
- Defant, Andreas Radon-Nikodým properties for duals of locally convex spaces and the coincidence of integral and nuclear mappings. **85i:46004**
- Furstenberg, Hillel (with Kifer, Yuri) Random matrix products and measures on projective spaces. **85i:22010**
- Kifer, Yuri See Furstenberg, Hillel, **85i:22010**



# 28Cxx Measures on spaces with additional structure [See also 46G12, 58C35, 58D20.]

## 28C05 Integration theory via linear functionals (Radon measures, Daniell integrals, etc.), representing measures

- Deaibes, Ali (with Nouredine, Khalil) Mesures cylindriques singulières sur un espace de Hilbert. Équivalence et orthogonalité. [Singular cylindrical measures on a Hilbert space. Equivalence and orthogonality] 85j:28016
- Gardner, R. J. (with Pfeffer, Washek Frank) Some unsolvable questions relating to Radon measures. (Russian) 85f:28011
- Herváth, John The behavior of the Riesz representation theorem with respect to order and topology. 85e:28019
- Klein, Christoph Finitely additive measures on subsets of compact spaces. 85i:28003
- Lints, R. G. Carathéodory and Radon measures in Gauss spaces. 85i:28004
- Nouredine, Khalil See Deaibes, Ali, 85j:28016
- Pfeffer, Washek Frank See Gardner, R. J., 85f:28011
- Sentilles, Dennis (with Wheeler, R. F.) Pettis integration via the Stonian transform. 85c:28006
- Topase, Flemming Radon measures, some basic constructions. 85g:28013
- Wheeler, R. F. See Sentilles, Dennis, 85c:28006

### secondary classifications (28C05)

- Kupka, Joseph (with Prikyr, Karel) The measurability of uncountable unions. 85g:28015
- Prikyr, Karel See Kupka, Joseph, 85g:28015
- Teleman, Silviu On the regularity of the boundary measures. 85i:46018

## 28C10 Measures on topological groups, Haar measures, invariant measures [See also 43A05.]

- Antosik, Piotr (with Swartz, Charles) The Schur and Phillips lemmas for topological groups. 85d:28006
- Kabe, D. G. On Haar measure of certain hypercomplex unitary groups. 85e:28020
- Mukhin, V. V. Invariant measures in semigroups with open shifts. (Russian. English summary) 85a:28008
- Pelc, Andrzej (with Prikyr, Karel) On a problem of Banach. 85d:28007
- The nonexistence of maximal invariant measures on abelian groups. 85j:28009
- Prikyr, Karel See Pelc, Andrzej, 85d:28007
- Swartz, Charles See Antosik, Piotr, 85d:28006

### secondary classifications (28C10)

- Bandt, Christoph Metric invariance of Haar measure. 85c:43001
- Batt, Jürgen (with Dinculeanu, Nicolae) On the weak compactness criteria of Kolmogorov-Tamarkin and M. Riesz type in the space of Bochner integrable functions over a locally compact group. 85j:46060
- Dinculeanu, Nicolae See Batt, Jürgen, 85j:46060
- Kharasishvili, A. B. Quasi-invariant measures in topological groups. (Russian. English and Georgian summaries) 85c:43002
- ★ Инвариантные продолжения меры Лебега. (Russian) [Invariant extensions of the Lebesgue measure] 85i:28001
- Morris, Sidney A. (with Peck, Vincent C.) A note on homeomorphic measures on topological groups. 85a:22006
- Peck, Vincent C. See Morris, Sidney A., 85a:22006
- Stute, Winfried Riesz representation of  $p$ -linear forms on  $C(X)$ . 85k:46080
- Trockel, Walter Uniqueness of mean maximizers via an ergodic theorem. (German and Russian summaries) 85b:90016
- Yamaguchi, Hiroshi An extension of a theorem of F. Forelli. 85b:43001

## 28C15 Measures on topological spaces (regularity of measures, etc.)

- Babiker, A. G. A. G. (with Graf, Siegfried) Homomorphism-compact spaces. 85a:28009
- Bachman, G. (with Sæto, Mabel) On strongly replete lattices, support of a measure, and the Wallman remainder. 85k:28017
- Bandt, Christoph Many measures are Hausdorff measures. (Russian summary) 85e:28021
- Buldigin, V. V. (with Kharasishvili, A. B.) Borel measures in nonseparable metric spaces. (Russian) 85c:28007
- Caby, Errol Extension of uniform measures. 85d:28008
- Chiffi, Antonio (with Zirello, Giancarlo) Hausdorff measure and approximating measures. (Italian) 85d:28009
- van Douwen, Eric K. A compact space with a measure that knows which sets are homeomorphic. 85k:28018
- Filter, Wolfgang Isolated and anti-isolated measures. (See 85m:28002)
- Gardner, R. J. (with Pfeffer, Washek Frank) Decomposability of Radon measures. 85g:28014
- Graf, Siegfried See Babiker, A. G. A. G., 85a:28009
- del Junco, Andrés A family of counterexamples in ergodic theory. 85b:28012
- Kharasishvili, A. B. See Buldigin, V. V., 85c:28007
- Kupka, Joseph (with Prikyr, Karel) The measurability of uncountable unions. 85g:28015
- Lembecke, Jörn On simultaneous preimage measures on Hausdorff spaces. 85g:28016
- Louveau, Alain Effective construction of measures. 85b:28013
- Masani, P. The distribution functions of finitely additive vector measures over  $\mathbb{R}^n$ . I. 85k:28019a
- Erratum: "The distribution functions of finitely additive vector measures over  $\mathbb{R}^n$ . I." 85k:28019b
- Pfeffer, Washek Frank See Gardner, R. J., 85g:28014
- Preis, David Dimension of metrics and differentiation of measures. 85b:28014
- Prikyr, Karel See Kupka, Joseph, 85g:28015
- Prins, P. Negligible sets of Radon measures. 85b:28015
- Sæto, Mabel See Bachman, G., 85k:28017

- Truffert, A. Propriété de Fatou-Vitali: application à l'épi-convergence des fonctionnelles intégrales (d'après E. Giner). [Fatou-Vitali property: application to the epi-convergence of integral functionals (following E. Giner)] 85j:28010
- Winkler, Gerhard A note on the extension of weak Radon measures on locally convex spaces to strong Radon measures. 85e:28022
- Zakharov, V. K. Hyper-Stonian absolute of a completely regular space. (Russian) 85j:28011
- Zirello, Giancarlo See Chiffi, Antonio, 85d:28009

### secondary classifications (28C15)

- Acquaviva, A. Mesures aléatoires  $t$ -régulières. [ $t$ -regular random measures] 85d:60004
- Mesures aléatoires localement finies. [Locally finite random measures] 85d:60005
- Babiker, A. G. A. G. (with Straus, Werner) The pseudotopology on function spaces. (Italian summary) 85g:40030
- Choquet, Gustave Représentation intégrale. [Integral representation] 85c:46007
- Cox, G. V. On Prohorov spaces. 85b:54069
- Dai, Yong Long Locally weak convergence of measures on a metric space. (Chinese) 85b:60004
- Daletskii, Yu. L. (with Smolyanov, O. G.) Weak sequential completion of the space of Radon measures. (Russian. English summary) 85f:46054
- Fedorova, V. P. Linear functionals on spaces of uniformly continuous functions, and abstract measures. (Russian) 85j:46033
- Fernández Novoa, J. (with Jiménez Guerra, P.) Opérateurs dans les espaces de mesures. [Operators in spaces of measures] 85a:47034
- Grassl, Peter On subspaces of replete and measure replete spaces. 85b:28006
- Idzik, Adam Theorems on selectors in topological spaces. I. 85k:54024
- Jiménez Guerra, P. See Fernández Novoa, J., 85a:47034
- Klein, Christoph Finitely additive measures on subsets of compact spaces. 85i:28003
- Koumoullis, G. (with Prikyr, Karel) The Ramsey property and measurable selections. 85g:54010
- Lints, R. G. Carathéodory and Radon measures in Gauss spaces. 85i:28004
- Moreau, J.-J. Cinématique de variétés  $C^1$  et transport de mesures scalaires. [Kinematics of  $C^1$  manifolds and transport of scalar measures] 85b:58027
- Ochur, A. I. Regularity of  $N$ -triangular set functions. (Russian) 85f:28001
- Prasad, V. S. A mapping theorem for Hilbert cube manifolds. 85c:58024
- Prikyr, Karel See Koumoullis, G., 85g:54010
- Smolyanov, O. G. See Daletskii, Yu. L., 85f:46054
- Stépan, Josef A noncompact Choquet theorem. 85b:46023
- Straus, Werner See Babiker, A. G. A. G., 85g:46030
- Takahashi, Yasuji Kernels of cylindrical measures on locally convex Hausdorff spaces. 85i:46060
- Wheeler, R. F. A survey of Baire measures and strict topologies. 85b:46035

## 28C20 Measures and integrals in function spaces (Wiener measure, Gauss measure, etc.) [See also 58D20, 60B11.]

- Ahn, Jae Moon See Chang, Kun Soo, 85j:28012 and Chung, Dong M., 85j:28013
- Cameron, R. H. (with Storvick, D. A.) A new translation theorem for the analytic Feynman integral. 85d:28010
- Chang, Kun Soo Scale-invariant measurability in Yeh-Wiener space. (Korean summary) 85k:28020
- (with Ahn, Jae Moon) Translation theorem for conditional Yeh-Wiener integrals. 85j:28012
- Chung, Dong M. (with Ahn, Jae Moon) Conditional Yeh-Wiener integrals. 85j:28013
- Gavryliv, O. S. Some properties of multiple Wiener integrals. (Russian) (Not in MR)
- Koval'chik, I. M. A formula for calculating Wiener integrals. (Russian) 85e:28023
- (with Shidlovskii, S. L.) A nonlinear transformation of the Wiener integrals. (Russian) (Not in MR)
- Linde, Werner (with Mathé, Peter) Inequalities between integrals of  $p$ -stable symmetric measures on Banach spaces. 85m:28013
- Lobanov, Yu. Yu. See Zhidkov, E. P.; et al., 85j:28014
- Maeda, Michie Some examples of measurable norms. 85a:28010
- Mathé, Peter See Linde, Werner, 85m:28013
- Shidlovskii, S. L. See Koval'chik, I. M., (Not in MR)
- Sidorova, O. V. See Zhidkov, E. P.; et al., 85j:28014
- Storvick, D. A. See Cameron, R. H., 85d:28010
- Weis, Lutz W. Diffuse stochastische Kerne. [Diffuse stochastic kernels] 85m:28014
- Zhidkov, E. P. (with Lobanov, Yu. Yu.; Sidorova, O. V.) ★ Составная приближенная формула произвольного порядка точности для континуальных интегралов по гауссово мере. (Russian) [A composite approximate formula of arbitrary order of accuracy for continual integrals with respect to a Gaussian measure] 85j:28014

### secondary classifications (28C20)

- Albinus, Günter Mathematische Aspekte der Funktionalintegration. [Mathematical aspects of functional integration] 85i:58030
- Chuprunov, A. N. Locally convex spaces in which each probability is dense. (Russian) 85d:46003
- Cremer, Heins (with Kadelka, D.) Kernel-type compactness criteria in  $L_p^E$  spaces. 85h:46055
- Davis, Burgess (with Monroe, Itrel) Randomly started signals with white noise. 85j:60149
- Egorov, A. D. Approximate formulas for integrals with respect to a Gaussian measure of special functionals. (Russian. English summary) 85a:65038
- Gross, Eugene P. Lower bounds for Wiener integrals. 85i:82009
- Hertle, Alexander On the asymptotic behaviour of Gaussian spherical integrals. 85g:60011
- Jacobs, Konrad (with Seiffert, Gerta) A measure-theoretical max-flow problem. I. General theory; sup-inf problems, cuts. 85f:90112a
- A measure-theoretical max-flow problem. II. Approximation. 85f:90112b

- Jeffries, Brian Collectively measurable sets and abstract Wiener spaces. 85j:46074
- Johnson, Gerald W. A bounded convergence theorem for the Feynman integral. 85i:41071
- Kadets, D. See Cramer, Helmut, 85h:46065
- Kalashnikov, V. V. Metrization of the space  $D[0, \infty)$ . (Russian) 85i:00006
- Kosin, I. V. The Lebesgue decomposition for spherically invariant measures. (Russian. English summary) 85j:60010
- Kusnoka, Shigeo On the absolute continuity of the law of a system of multiple Wiener integrals. 85h:60121
- Luttinger, J. M. The asymptotic evaluation of a class of path integrals. II. 85e:81048
- Mahagon, Andrzej On the Hellinger square integral with respect to an operator valued measure and stationary processes. 85j:46070
- Mandrekar, V. Some remarks on various definitions of Feynman integral. 85d:81050
- Mathé, Peter A note on classes of Banach spaces related to stable measures. 85j:60011
- Monroe, Itrel See Davis, Burgess, 85j:60149
- Nakanishi, Shiso On measures in ranked spaces, linear functionals and compact sets. 85d:46087
- Norin, N. V. Heat potentials on a Hilbert space. (Russian) 85i:46069
- Préiss, David Differentiation of measures in infinitely-dimensional spaces. 85e:60015
- Rihaoui, I. Continuité et différentiabilité des translations dans un espace gaussien. [Continuity and differentiability of translations in a Gaussian space] 85e:60044
- Selfert, Gerta See Jacobs, Konrad, 85f:90112a
- Sobolevskii, P. I. Approximate calculation of conditional Wiener path integrals. Elementary and composite formulas. (Russian. English summary) 85k:60115
- Svidlinskii, A. V. \*Пространственно-неоднородные задачи теории сверхпроводимости. (Russian) [Spatially-inhomogeneous problems in the theory of superconductivity] 85f:81085

## 28C99 None of the above, but in this section

- Kharashevili, A. B. Absolute nonmeasurability of the unit ball in an infinite-dimensional separable Hilbert space. (Russian. English and Georgian summaries) 85h:28016

### secondary classifications (28C99)

- Balbás de la Corte, Alejandro Radon measures of type  $N$  in locally convex spaces. (Spanish. English summary) 85k:46053
- Griffiths, Robert B. (with Gujrali, P. D.) Convexity violations for noninteger parameters in certain lattice models. 85c:82070
- Gujrali, P. D. See Griffiths, Robert B., 85c:82070
- Maeda, Michio Some examples of cylindrical measure without measurable norms. 85j:46075
- Wilhelm, M. Integral extension procedures in weakly  $\sigma$ -complete lattice-ordered groups. I. 85j:06016

## 28Dxx Measure-theoretic ergodic theory [See also 22D40, 47A35, 54H20, 58Fxx, 60Fxx, 60G10.]

### 28D05 Measure-preserving transformations

- Aaronson, Jon (with Weiss, B.) Generic distributional limits for measure preserving transformations. 85e:28024
- Akçoglu, M. A. (with Sucheston, L.) On identification of superadditive ergodic limits. 85k:28021
- Atencia, E. (with Martín-Reyes, F. J.) The maximal ergodic Hilbert transform with weights. 85e:28025
- Bellow, Alexandra On "bad universal" sequences in ergodic theory. II. 85m:28015
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- Miller, Harry I. (with Pal, Mukul) On a set in  $\mathbb{R}^n$  under coordinate transformations. (Russian and Czech summaries) 85m:28024
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- Goodman, A. W. ★ Univalent functions. Vol. I. 85j:30035a
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### 30-02 Advanced exposition (research surveys, monographs, etc.)

- Carlsson, Lennart Selected problems on exceptional sets. (See 85i:00004)
- Fisher, S. D. ★ Function theory on planar domains. 85d:30001
- (Lewy, Julian) See Problems: Theory of functions of one complex variable, (85d:32001)
- Strebel, Kurt Quadratic differentials: a survey. 85h:30002
- (Tammi, Olli) See Problems: Theory of functions of one complex variable, (85d:32001)
- Problems: Theory of functions of one complex variable Problems in the theory of functions of one complex variable. (See 85d:32001)

## secondary classifications (30-02)

- Brackx, F. (with Delanghe, Richard; Sommen, F.) ★ Clifford analysis. 85j:30103
- Delanghe, Richard See Brackx, F.; et al., 85j:30103
- Duren, Peter L. ★ Univalent functions. 85j:30034
- (Dyn'kin, E. M.) See Garnett, John B., 85j:30073
- Galer, Dieter ★ Fubian hanabu bijinun. (Chinese) [Lectures on approximation in the complex domain] (Not in MR)
- Garnett, John B. ★ Ограниченные аналитические функции. (Russian) [Bounded analytic functions] 85j:30072
- (Khavin, V. P.) See Garnett, John B., 85j:30072
- (Lewy, Julian) See Problems: Theory of quasiconformal mappings, (85d:32001)
- Lehto, Olli A historical survey of quasiconformal mappings. 85m:30014
- (Ohtsuka, Makoto) See Problems: Theory of quasiconformal mappings, (85d:32001)
- Reshetnyak, Yu. G. ★ Теоремы устойчивости в геометрии и анализе. (Russian) [Stability theorems in geometry and analysis] 85g:30028

(Shen, Xie Chang) See Gaier, Dieter, (Not in MR)

Sommen, F. See Brackx, F.; et al., 85j:30103

Yang, Le ★ Zhi fenbu lun ji qi xin yanjiu. (Chinese) [Value distribution theory and new research on it] 85f:30050

#### Problems:

Theory of quasiconformal mappings Problems in the theory of quasiconformal mappings. (See 85d:32001)

Value distribution theory and new research on it See Yang, Le, 85f:30050

30-03 Historical (must also be assigned at least one classification number from Section 01)

secondary classifications (30-03)

Andreian Cazacu, Cabiria Betrachtungen über rumänische Beiträge zur Theorie der nicht orientierbaren Riemannschen Flächen. [Reflections on Romanian contributions to the theory of nonorientable Riemann surfaces] 85a:01043

Sur l'oeuvre mathématique de Simion Stoilow. [The mathematical works of Simion Stoilow] 85j:01024

Ayoub, Raymond The lemniscate and Fagnano's contributions to elliptic integrals. 85g:01015

Berndt, Bruce C. (with Evans, Ronald J.; Wilson, B. M.) Chapter 3 of Ramanujan's second notebook. 85c:11020

Evans, Ronald J. See Berndt, Bruce C.; et al., 85c:11020

(Fagano, Giulio) See Ayoub, Raymond, 85g:01015

Goodman, A. W. ★ Univalent functions. Vol. I. 85j:30035a

★ Univalent functions. Vol. II. 85j:30035b

(with Libera, R. J.) A review of M. S. Robertson's work. 85j:01029b

Klingen, H. Das Werk C. L. Siegels in der Funktionentheorie. [C. L. Siegel's work in complex analysis] 85a:01046

(Lehti, Raimo) See Special issue: Nevanlinna, Rolf, 85g:01031

Lehto, Olli On Rolf Nevanlinna's mathematical work and on his role, together with Simion Stoilow, as a promoter of Romanian-Finnish mathematical relations. 85i:01034

Leont'ev, A. F. Theory of approximation and representation of analytic functions. (Russian) (See 85g:01004)

Libera, R. J. See Goodman, A. W., 85j:01029b

(Nevanlinna, Rolf) See Special issue: Nevanlinna, Rolf, 85g:01031 and Lehto, Olli, 85i:01034

(Robertson, Malcolm S.) See Goodman, A. W., 85j:01029b

(Siegel, Carl Ludwig) See Klingen, H., 85a:01046

(Stoilow, Simion) See Lehto, Olli, 85i:01034 and Andreian Cazacu, Cabiria, 85j:01024

Wilson, B. M. See Berndt, Bruce C.; et al., 85c:11020

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Robertson, Malcolm S. See Goodman, A. W., 85j:01029b

#### Special issue:

Nevanlinna, Rolf ★ Rolf Nevanlinna-erikoinennumero. (Finnish) [Rolf Nevanlinna special issue] 85g:01031

30-04 Explicit machine computation and programs (not the theory of computation or programming)

secondary classifications (30-04)

Curry, James H. (with Garnett, Lucy; Sullivan, Dennis P.) On the iteration of a rational function: computer experiments with Newton's method. 85c:30040

Garnett, Lucy See Curry, James H.; et al., 85c:30040

Mandelbrot, Benoit B. Self-inverse fractals occluded by sigma-discs and the limit sets of inversion groups. 85k:30009

Sullivan, Dennis P. See Curry, James H.; et al., 85c:30040

30-06 Proceedings, conferences, etc.

(Aleksandrov, I. A.) See Extremal problems of the theory of functions, 85g:30002

(Chernikov, V. V.) See Extremal problems of the theory of functions, 85g:30002

(Lawrynowicz, Julian) See Complex analysis, 85g:30001 and Proceedings: Finnish-Polish summer school in complex analysis, 85g:30003

(Martio, O.) See Proceedings: Finnish-Polish summer school in complex analysis, 85g:30003

(Siciak, Józef) See Complex analysis, 85g:30001

Complex analysis ★ Complex analysis, 85g:30001

Extremal problems of the theory of functions ★ Экстремальные задачи теории функций. (Russian) [Extremal problems of the theory of functions] 85g:30002

Jyväskylä ★ Proceedings of the second Finnish-Polish summer school in complex analysis. 85g:30003

#### Proceedings:

Finnish-Polish summer school in complex analysis ★ Proceedings of the second Finnish-Polish summer school in complex analysis. 85g:30003

#### Seminar:

Complex analysis ★ Complex analysis, 85g:30001

Geometric function theory ★ Seminar: Geometric function theory. 85d:30002

#### Summer school:

Finnish-Polish, complex analysis ★ Proceedings of the second Finnish-Polish summer school in complex analysis. 85g:30003

Warsaw ★ Complex analysis, 85g:30001

secondary classifications (30-06)

(Andreian Cazacu, Cabiria) See Seminar: Romanian-Finnish, complex analysis, 85h:00013a

(Boboc, N.) See Seminar: Romanian-Finnish, complex analysis, 85h:00013a

(Bünger, H.-J.) See Padé approximation and its applications, 85j:41003

(Chavel, Isaac) See Differential geometry and complex analysis, 85k:53002

(Farkas, H. M.) See Differential geometry and complex analysis, 85k:53002

(Jurcsescu, M.) See Seminar: Romanian-Finnish, complex analysis, 85h:00013a

(Lewy, Julian) See Analytic functions, 85d:32001

(Mandahavida, G. F.) See Boundary value problems of the theory of generalized analytic functions and their applications, 85d:35002

(Rauch, Harry E.) See Differential geometry and complex analysis, 85k:53002

(Suchu, I.) See Seminar: Romanian-Finnish, complex analysis, 85h:00013a

(Werner, Helmut) See Padé approximation and its applications, 85j:41003

Analytic functions ★ Analytic functions, Blasiewicz 1982. 85d:32001

Bad Honnef ★ Padé approximation and its applications, Bad Honnef 1983. 85j:41003

Blasiewicz ★ Analytic functions, Blasiewicz 1982. 85d:32001

Boundary value problems of the theory of generalized analytic functions and their applications ★ Граничные задачи теории обобщенных аналитических функций и их приложения. (Russian) [Boundary value problems of the theory of generalized analytic functions and their applications] 85d:35002

Bucharest ★ Complex analysis—fifth Romanian-Finnish seminar. Part 1. 85h:00013a

#### Conference:

Analytic functions ★ Analytic functions, Blasiewicz 1982. 85d:32001

Padé approximation and its applications ★ Padé approximation and its applications, Bad Honnef 1983. 85j:41003

Differential geometry and complex analysis ★ Differential geometry and complex analysis, 85k:53002

#### Festschrift:

Rauch, Harry E. ★ Differential geometry and complex analysis, 85k:53002

Padé approximation and its applications ★ Padé approximation and its applications, Bad Honnef 1983. 85j:41003

#### Seminar:

Romanian-Finnish, complex analysis ★ Complex analysis—fifth Romanian-Finnish seminar. Part 1. 85h:00013a

### 30Axx General properties

30A05 Monogenic properties of complex functions (including polygenic and areolar monogenic functions)

Sindalovskii, G. Kh. Analyticity of functions from the class  $L_1$  satisfying the Cauchy-Riemann conditions. (Russian) 85k:30001

secondary classifications (30A05)

Tutschke, Wolfgang Cauchy problems with monogenic initial values. 85h:30003

### 30A10 Inequalities in the complex domain

Andreev, V. V. Upper bounds for the modulus of the divided difference of analytic functions. 85b:30001

Daigulidze, O. P. Some integral inequalities. (Russian) 85d:30003

Gong, Sheng Another improved form of the Fitzgerald inequality. (Chinese) (Not in MR)

Huang, Xian Chun (with Yin, Chuan Xi) On an improved estimate of  $|f^{(n)}(z)|$ . (Chinese. English summary) 85d:30004

Lakshminarasimhan, T. V. On reverse isoperimetric inequalities for related regular functions in the unit disk. 85d:30005

Lin, Ch'ing Ho Phragmén-Lindelöf theorem in a cohomological form. 85a:30003

Matešević, M. (with Pavlović, Miroslav) New proofs of the isoperimetric inequality and some generalizations. 85c:30001

Miller, Sanford S. (with Mocanu, Petru T.) General second order differential inequalities in the complex plane. 85g:30004

Mocanu, Petru T. See Miller, Sanford S., 85g:30004

Pavlović, Miroslav See Matešević, M., 85c:30001

Theodoroviciu, Cornel Some differential inequalities in the complex plane. II. 85j:30001

Yin, Chuan Xi See Huang, Xian Chun, 85d:30004

secondary classifications (30A10)

Chen, Ji Xiu An inequality of subordinate functions. 85d:30018

An inequality for subordinate functions. (Chinese) (Not in MR)

Dewan, K. K. (with Govil, N. K.) An inequality for the derivative of self-inversive polynomials. 85f:30008

Another proof of a theorem of Ankeny and Rivlin. (Serbo-Croatian summary) 85c:30008

(with Govil, N. K.) Some integral inequalities for polynomials. 85d:30009

Govil, N. K. See Dewan, K. K., 85d:30009 and 85f:30008

Hall, R. R. On an inequality of E. Heins. 85k:42011

Jevtić, M. Quelques inégalités concernant l'arée-fonction. [Some inequalities concerning area functions] 85i:30008

Kumar, Naresh See Srivastava, G. S., 85c:30047

Malik, Mohammad Abdul An integral mean estimate for polynomials. 85c:30007

Mekhtiev, G. D. The connection between growth and number of zeros of a generalized analytic function. (Russian) 85h:30000

Srivastava, G. S. (with Kumar, Naresh) Some inequalities related to proximate order of an entire function with index pair  $(p, q)$ . 85c:30047

Todorov, P. G. Extremal problems for analytic functions. 85j:30043

### 30A99 None of the above, but in this section

secondary classifications (30A99)

Daigulidze, O. P. Holomorphy and membership of functions in the Fedorov-Smirnov class. (Russian. English and Georgian summaries) 85c:30004

## 30Bxx Series expansions

## 30B10 Power series (including lacunary series)

- Abian, Alexander On a property of finite truncations of the Laurent series of analytic functions. 85f:30001
- Faulstich, K. (with Luh, W.) Summability of power series on prescribed sets by regular Riesz methods. 85h:30003
- Gauschke, D. (with Pommerenke, Christian) On the absolute convergence of power series with Hadamard gaps. 85a:30004
- (with Pommerenke, Christian) On annular functions with Hadamard gaps. 85e:30002
- Luh, W. See Faulstich, K., 85h:30003
- Nautiyal, A. A remark on the generalized order of an analytic function. 85b:30002
- Pommerenke, Christian Some examples of power series with non-Hadamard gaps. 85j:30002
- See also Gauschke, D., 85a:30004 and 85f:30002
- Pourahmadi, Mohsen Taylor expansion of  $\exp(\sum_{k=0}^{\infty} a_k z^k)$  and some applications. 85e:30003
- Trautner, R. Moment multipliers for power series. (Russian summary) 85i:30001

## secondary classifications (30B10)

- Amerbaev, V. M. (with Pak, I. T.) Parallel calculations of values of an analytic function. (Russian) 85d:85017
- Ben Arous, G. Équations stochastiques à coefficients analytiques et séries de Taylor stochastiques. [Stochastic equations with analytic coefficients and stochastic Taylor series] 85d:60100
- Cass, F. P. (with Trautner, R.) An extension of Wiener's lemma to Banach algebra valued functions. 85b:30008
- Goldberg, A. A. The growth of an entire function represented by a lacunary power series. (Russian) 85k:30045
- Hayman, W. K. Value distribution and A.P. gaps. 85h:30038
- Hwang, Jun Shung A problem on automorphic functions and gap series. 85f:30063
- Kahane, J.-P. Sur la structure circulaire des ensembles de points limites des sommes partielles d'une série de Taylor. [On the circular structure of the limit point sets of the partial sums of a Taylor series] 85f:30003
- Layman, J. W. (with Prather, C. L.) Generalized Bell numbers and zeros of successive derivatives of an entire function. 85c:30026
- Mahapatra, C. K. See Mishra, A. K.; et al., 85j:30017
- Mishra, A. K. (with Mahapatra, C. K.; Pradhan, M.) Convex hulls and extreme points of classes of multivalent functions defined by gap power series. 85j:30017
- Murai, Takafumi The deficiency of gap series. 85d:30039
- Pak, I. T. See Amerbaev, V. M., 85d:85017
- Pradhan, M. See Mishra, A. K.; et al., 85j:30017
- Prather, C. L. See Layman, J. W., 85c:30026
- Sommerschein, J. Sur la structure de certains développements en série. [On the structure of certain series expansions] 85d:30009
- Trautner, R. See Cass, F. P., 85b:30008

## 30B20 Random power series

- Jakob, Matthias (with Offord, A. C.) The distribution of the values of a random power series in the unit disk. 85c:30002
- Offord, A. C. See Jakob, Matthias, 85c:30002
- secondary classifications (30B20)
- Grincevicius, A. Distribution of a random power series. (Russian. English and Lithuanian summaries) 85j:60096
- Holgate, P. The natural boundary problem for random power series with degenerate tail fields. 85d:60103
- (Kahane, J.-P.) See Yu, Jia Rong, 85f:30005
- Yu, Jia Rong Sur la croissance de certaines séries de Dirichlet sur des droites horizontales. [On the growth of certain Dirichlet series on horizontal lines] 85f:30005

## 30B30 Boundary behavior of power series, over-convergence

- Kahane, J.-P. Sur la structure circulaire des ensembles de points limites des sommes partielles d'une série de Taylor. [On the circular structure of the limit point sets of the partial sums of a Taylor series] 85f:30003
- Sabados, J. Converse results in the theory of overconvergence of complex interpolating polynomials. 85c:30003
- Tomm, Ludwig (with Trautner, R.) A universal power series for approximation of measurable functions. 85e:30004
- Trautner, R. See Tomm, Ludwig, 85e:30004

## secondary classifications (30B30)

- Hlawka, Edmund Gleichverteilung und das Konvergenzverhalten von Potenzreihen am Rande des Konvergenzkreises. (English summary) [Uniform distribution and the convergence behavior of power series on the boundary of the convergence circle] 85c:11090

## 30B40 Analytic continuation

- Arakelyan, N. U. Effective analytic continuation of power series. (Russian) 85f:30004
- Fitzgerald, Carl H. Particular cases of analytic extension of boundary values. 85h:30004
- Lavrent'ev, M. M. Some questions of analytic continuation from interior sets. (Russian) 85a:30005
- Shawyer, Bruce L. R. (with Tomm, Ludwig) Analytic continuation of power series by regular generalized weighted means. 85e:30005
- Tomm, Ludwig See Shawyer, Bruce L. R., 85e:30005

## secondary classifications (30B40)

- Bondar', A. V. Local continuation of the Lipschitz boundary condition for holomorphic functions. (Russian) 85f:30052
- Eiermann, Michael (with Niethammer, W.) Interpolation methods for numerical analytic continuation. 85d:30060
- On the convergence of Padé-type approximants to analytic functions. 85e:30061
- Lavrent'ev, M. M. Interior problems for differential equations. (Russian) 85j:30075
- Niethammer, W. See Eiermann, Michael, 85d:30060

## 30B50 Dirichlet series and other series expansions, exponential series

[See also 40-XX, 41-XX, 42-XX.]

- Blambert, Maurice (with Parvatham, R.) Sur une inégalité fondamentale et les singularités d'une fonction analytique définie par un élément LC-dirichletien. [A fundamental inequality and the singularities of an analytic function defined by an LC-Dirichlet element] 85m:30001
- Boichev, Georgi S. Uniform convergence of Jacobi series on the boundary of domains of convergence. (Russian) 85g:30005
- Cohen, M. E. (with Hudson, D. L.) On exponential series expansions and convolutions. 85g:30006
- Filippova, N. M. A uniqueness theorem. (Russian) 85a:30006
- Gupta, Ved Parkash A remark on the means of entire Dirichlet series. 85i:30002
- He, Long Zhen On the  $P(R)$  order and  $P(R)$  type of analytic functions defined by Dirichlet series. (Chinese. English summary) 85a:30007
- Hudson, D. L. See Cohen, M. E., 85g:30006
- (Kahane, J.-P.) See Yu, Jia Rong, 85f:30005
- Kamthan, P. K. (with Singh Gautam, S. K.) On bases in the spaces of Dirichlet transformations of finite order  $p$ . 85c:30006
- Kasana, H. S. See Vaish, S. K., 85a:30009
- Korobelnik, Yu. F. Some representing systems in spaces of analytic functions. (Russian) 85b:30003
- Leon'tev, A. F. The domain of convergence of series of generalized exponentials. (Russian) 85a:30008
- Leon'tev, T. A. Partition of a class of functions, represented by sequences of generalized Dirichlet polynomials, into subclasses. (Russian) 85c:30004
- Mel'nik, Yu. I. Absolute convergence of series of exponentials representing functions that are regular in convex polygons. (Russian) 85b:30004
- Nautiyal, A. (with Shukla, D. P.) On the approximation of an analytic function by exponential polynomials. 85d:30006
- Parvatham, R. See Blambert, Maurice, 85m:30001
- Rusev, Pet'ar K. Expansion of analytic functions in series of classical orthogonal polynomials. 85b:30005
- Sheremeta, M. N. The rate of convergence of partial sums of an entire Dirichlet series. (Russian) 85d:30007
- Shukla, D. P. See Nautiyal, A., 85d:30006
- Singh Gautam, S. K. See Kamthan, P. K., 85c:30006
- Srivastava, G. S. See Vaish, S. K., 85b:30005
- Vaish, S. K. The mean value of an entire function represented by Dirichlet series. 85c:30005
- (with Kasana, H. S.) On the term by term product of two entire Dirichlet series. (Turkish summary) 85a:30009
- (with Srivastava, G. S.) Logarithmic order and lower logarithmic order of entire Dirichlet series. (Turkish summary) 85b:30005
- Yu, Jia Rong Sur la croissance de certaines séries de Dirichlet sur des droites horizontales. [On the growth of certain Dirichlet series on horizontal lines] 85f:30005
- Some quasisure properties of exponential and power series. 85c:30006

## secondary classifications (30B50)

- Boyadzhiev, L. I. On the representation of entire functions by series of Laguerre polynomials. 85g:30042
- Boychev, G. S. (C,  $\delta$ )-summability of Laguerre series on boundaries of their convergence regions. 85b:42013
- Prolov, Yu. N. Conditions for representation of entire functions by series in eigenfunctions of a generalized differentiation operator. (Russian) 85h:30036
- Condition for the representability of entire functions by series of generalized exponents. (Russian) 85g:30043
- Gal', Yu. M. The maximum term of a Dirichlet series that converges absolutely in a half plane. (Ukrainian. Russian summary) 85d:30032
- Gopala Krishna, J. (with Subrahmanyam, K. H. S.) Study of multidimensional distributions and processes associated with multiple Dirichlet series and applications. 85f:60023
- Kasana, H. S. (with Srivastava, G. S.) On the means of entire Dirichlet series. 85b:30034
- Khom'yak, M. M. A theorem of Wiman type for entire functions of zero order in Ritt's sense, given by Dirichlet series. (Ukrainian. Russian summary) 85e:30042
- Kumar, Naresh See Srivastava, G. S., 85k:30047 and Vaish, S. K., 85k:30048
- Monako, T. P. Growth of entire functions represented by a multidimensional Dirichlet series. (Russian) (See 85k:35001)
- Parvatham, R. On the Ritt order of entire functions defined by  $L$ -Dirichletian elements. 85c:30025
- Slaković, Semirha The asymptotic behavior of  $D$ -means of Dirichlet series. (Serbo-Croatian. English summary) 85j:40002
- Srivastava, G. S. (with Kumar, Naresh) On the mean values of an analytic function. (Turkish summary) 85k:30047
- See also Kasana, H. S., 85b:30034
- Subrahmanyam, K. H. S. See Gopala Krishna, J., 85f:60023
- Vaish, S. K. On the logarithmic proximate type of an entire Dirichlet series. 85b:30037
- (with Kumar, Naresh) On the generalized mean of an entire function represented by Dirichlet series. (Turkish summary) 85k:30048



## 30B60 Completeness problems, closure of a system of functions

Bochkarev, S. V. Construction of polynomial bases in finite-dimensional spaces of functions analytic in the disk. (Russian) **85k:30002**

secondary classifications (30B60)

Blair, Charles E. (with Rubel, Lee A.) A universal entire function. **85a:30046**

Lyubarskii, Yu. I. (with Tkachenko, V. A.) The system  $\{e^{a_n z} \sin n z\}^{\infty}_{n=1}$ . (Russian) **85g:34022**

Muscoy, V. Kh. Extremal properties of Dirichlet polynomials. (Russian. English and Armenian summaries) **85d:41010**

Nagnibida, N. I. (with Nastasiev, P. P.) Strongly cyclic elements of a diagonal operator and completeness of a system of analytic functions. (Russian. English summary) **85e:47045**

Nastasiev, P. P. See Nagnibida, N. I., **85e:47045**

Rubel, Lee A. See Blair, Charles E., **85a:30046**

Tkachenko, V. A. See Lyubarskii, Yu. I., **85g:34022**

Wojtaszczyk, P.  $H_p$ -spaces,  $p \leq 1$ , and spline systems. **85f:46053**

## 30B70 Continued fractions [See also 11A55, 40A15.]

Bodnar, D. I. Tests for convergence of branching continued fractions. (Russian. English summary) **85d:30008**

Gragg, W. B. (with Warner, D. D.) Two constructive results in continued fractions. **85f:30006**

Nayar, B. M. Continued fractions and certain computational schemes. **85a:30010**

Warner, D. D. See Gragg, W. B., **85f:30006**

secondary classifications (30B70)

Frank, Evelyn Applications of continued fractions in function theory. **85i:65025**

Gill, John Convergence factors for certain continued fractions  $K(a_n/1)$ , where  $|a_n| < 1$ . **85j:40003**

A note on fixed-point continued fractions and Aitken's  $\Delta^2$ -method. **85k:65003**

Jacobsen, Lisa Further results on convergence acceleration for continued fractions  $K(a_n/1)$ . **85e:40002**

McCabe, J. H. On an asymptotic series and corresponding continued fraction for a gamma function ratio. **85i:33002**

Parusnikov, V. I. Limit-periodic multidimensional continued fractions. (Russian) **85h:32006**

Peratt, Anthony L. Continued fraction expansions for the complete, incomplete, and relativistic plasma dispersion functions. **85e:82053**

Ramanathan, K. G. On Ramanujan's continued fraction. **85d:11012**

Rogers, Joseph W. Locations of roots of polynomials. **85b:30008**

Sofa, Anthony Continued fractions. **85j:40006**

Stokes, A. N. Efficient stable ways to calculate continued fraction coefficients from some series. **85e:65008**

Waadeland, Haakon Tales about tails. **85f:40003**

## 30B99 None of the above, but in this section

Rippon, P. J. A final remark on infinite exponentials. (Not in MR)

Myanyamshev, G. L. Moduli of triply connected domains. (Russian) (Not in MR)

## 30Cxx Geometric function theory

## 30C10 Polynomials

Abdullaev, F. G. (with Andrievskii, V. V.) Orthogonal polynomials in domains with a quasiconformal boundary. (Russian. English and Azerbaijani summaries) **85f:30007**

Andrievskii, V. V. See Abdullaev, F. G., **85f:30007**

Asis, Abdul Inequalities for the derivative of a polynomial. **85a:30011**

(with Mohammad, Q. G.) Zero-free regions for polynomials and some generalizations of Eneström-Kakeya theorem. **85e:30007**

Chevskii, V. M. Estimates for logarithmic derivatives of algebraic polynomials. (Russian) **85a:30012**

Dewan, K. K. (with Govil, N. K.) An inequality for the derivative of self-inversive polynomials. **85f:30008**

Another proof of a theorem of Ankeny and Rivlin. (Serbo-Croatian summary) **85e:30008**

(with Govil, N. K.) Some integral inequalities for polynomials. **85d:30009**

Dimkov, G. M. Sur une classe de polynômes. I. [On a class of polynomials. I.] **85i:30003**

Ellacott, S. W. On Faber polynomials and Chebyshev polynomials. **85b:30006**

Goldstein, Myron (with McDonald, John N.) An extremal problem for nonnegative trigonometric polynomials. **85i:30004**

Govil, N. K. See Dewan, K. K., **85d:30009** and **85f:30008**

Malik, Mohammad Abdul On the coefficients of self-inverse polynomials. (Italian summary) **85a:30013**

An integral mean estimate for polynomials. **85c:30007**

McDonald, John N. See Goldstein, Myron, **85i:30004**

Mohammad, Q. G. See Asis, Abdul, **85a:30011**

Skibiński, Przemysław A distortion theorem for a class of polynomial mappings. **85i:30005**

Suffridge, T. J. Extreme points in the family of typically real polynomials. **85e:30009**

Yang, Chung Chun Some problems on polynomials and transcendental entire functions. (Chinese) **85i:30006**

secondary classifications (30C10)

Asis, Abdul Inequalities for polynomials with a prescribed zero. **85e:41015**

Dyer, Charles C. A modified Muller routine for finding the zeroes of a nonanalytic complex function. **85h:65062**

Khokhlov, Yu. E. (with Tsapov, V. A.) Linear operators and imbedding theorems for certain classes of univalent functions. (Russian) **85g:30011**

Laohakool, Wichian Certain functions associated with polynomials and some number theoretic applications. **85f:12002**

Li, Tien Yien On locating all zeros of an analytic function within a bounded domain by a revised Delves/Lyness method. **85f:65024**

Myerson, Gerald A measure for polynomials in several variables. **85e:11045**

Plásk, Vlastimil Bezoutians and projections. **85i:15045a**

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Maitani, Fumio Variations of meromorphic differentials under quasiconformal deformations. 85i:30068

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Menke, Klaus On Tsuji points in a continuum. 85c:30063

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Sulta, Nobuyuki See Pommerenke, Christian, 85i:30088

Taniguchi, Masahiko Dirichlet finite harmonic differentials with integral periods on arbitrary Riemann surfaces. 85d:30069

Zorin, N. V. Generalization of the symmetric case of A. A. Gonchar's problem on capacities of condensers. (Russian) 85c:31001

Estimates of capacities and energies in the reconstruction of spatial condensers. (Russian) 85c:31009

### 30C99 None of the above, but in this section

Haruki, H. First note on the Nevanlinna-Pólya theorem. (Japanese) (Not in MR)

Hwang, Jun Shung (with Lappan, Peter) A necessary condition for the Bloch ordering. 85g:30037

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Strebel, Kurt On the metric  $|f(z)|^2|dz|$  with holomorphic  $f$ . 85j:30092

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### 30Dxx Entire and meromorphic functions, and related topics

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(with Geronimo, J. S.; Harrington, A. N.) Erratum to "Infinite-dimensional Jacobi matrices associated with Julia sets" [Proc. Amer. Math. Soc. 88 (1983), no. 4, 625-630; MR 85a:30040]. 85m:30018

(with Harrington, A. N.) Moments of balanced measures on Julia sets. 85j:30053

- Bhattacharyya, P. On completely invariant domains and domains of normality. 85f:30034
- Cowen, Carl C. Commuting analytic functions. 85i:30054
- Curry, James H. (with Garnett, Lucy; Sullivan, Dennis P.) On the iteration of a rational function: computer experiments with Newton's method. 85e:30040
- Duboc, Serge Étude théorique et numérique de la fonction de Karlin-McGregor. [Theoretical and numerical study of the Karlin-McGregor function] 85g:30040
- Dzhrbashyan, A. M. Factorization of some general classes of functions meromorphic in a half-plane. 85h:30035
- Garnett, Lucy See Curry, James H.; et al., 85e:30040
- Geronimo, J. S. See Barnsley, M. F.; et al., 85a:30040 and 85m:30018
- Gross, Fred Fixed points of composite entire functions. 85g:30041
- Harrington, A. N. See Barnsley, M. F.; et al., 85a:30040; 85j:30053 and 85m:30018
- Langley, James K. The distribution of zeros of certain differential polynomials. 85i:30040
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- Renggli, H. On endomorphisms of Riemann surfaces. 85m:30019
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- Baker, George A., Jr. (with Bassi, D.; Moussa, Pierre) A family of almost periodic Schrödinger operators. 85m:81032
- Balsler, W. (with Jurkat, W. B.; Lutz, D. A.) Transfer of connection problems for first level solutions of meromorphic differential equations, and associated Laplace transforms. 85c:34006
- Bank, Steven B. (with Frank, Günter; Laine, Ilpo) Über die Nullstellen von Lösungen linearer Differentialgleichungen. [On the zeros of solutions of linear differential equations] 85j:34054
- Barnsley, M. F. (with Geronimo, J. S.; Harrington, A. N.) On the invariant sets of a family of quadratic maps. 85g:58055
- (with Geronimo, J. S.; Harrington, A. N.) Geometrical and electrical properties of some Julia sets. 85m:58108
- Bensimon, D. See Widom, Michael; et al., 85i:58073
- Bassi, D. (with Moussa, Pierre) Orthogonality properties of iterated polynomial mappings. 85a:58053
- (with Geronimo, J. S.; Moussa, Pierre) Mellin transforms associated with Julia sets and physical applications. 85i:58067
- See also Baker, George A., Jr.; et al., 85m:81032
- Blanchard, Paul Complex analytic dynamics on the Riemann sphere. 85h:38001
- Cerlienco, Luigi (with Delogu, G.; Piras, Francesco) Second-order linear recurrence sequences and some of their applications. (Italian. English summary) 85b:30006
- Delogu, G. See Cerlienco, Luigi; et al., 85b:30006
- Devaney, Robert L. Bursts into chaos. 85m:58109
- Douady, Adrian Systèmes dynamiques holomorphes. [Holomorphic dynamical systems] 85h:58090
- Frank, Günter See Bank, Steven B.; et al., 85j:34054
- Freire, Alexandre (with Lopes, Artur Oscar; Mañé, R.) An invariant measure for rational maps. 85m:58110b
- Geronimo, J. S. See Barnsley, M. F.; et al., 85g:58055; Bassi, D.; et al., 85i:58067 and Barnsley, M. F.; et al., 85m:58108
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- Harrington, A. N. See Barnsley, M. F.; et al., 85g:58055 and 85m:58108
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- Jurkat, W. B. See Balsler, W.; et al., 85c:34006
- Kadanoff, Leo P. See Widom, Michael; et al., 85i:58073
- Kallin, S. I. Approximation of the solution of a homogeneous convolution equation whose characteristic function satisfies lower estimates. (Russian) 85d:30058
- Kubota, Yoshihisa Iteration of holomorphic maps of the unit ball into itself. 85c:32047b
- Laine, Ilpo See Bank, Steven B.; et al., 85j:34054
- Lopes, Artur Oscar See Freire, Alexandre; et al., 85m:58110b
- Lutz, D. A. See Balsler, W.; et al., 85c:34006
- Lyubich, M. Yu. Some typical properties of the dynamics of rational mappings. (Russian) 85f:58063
- MacCluer, Barbara D. Iterates of holomorphic self-maps of the unit ball in  $C^N$ . 85c:32047a
- Makhmudov, A. S. (with Akhundov, R. R.) Trigonometric and hyperbolic functions of two variables. (Russian. English and Azerbaijani summaries) 85d:26001
- Mandelbrot, Benoit B. On the quadratic mapping  $z \rightarrow z^2 - \mu$  for complex  $\mu$  and  $z$ : the fractal structure of its  $M$  set, and scaling. 85d:58065
- Mañé, R. (with Sad, P.; Sullivan, Dennis P.) On the dynamics of rational maps. 85j:58089
- On the uniqueness of the maximizing measure for rational maps. 85m:58110a
- See also Freire, Alexandre; et al., 85m:58110b
- Manning, Anthony The dimension of the maximal measure for a polynomial map. 85i:58068
- Manton, N. S. (with Nauenberg, M.) Universal scaling behaviour for iterated maps in the complex plane. 85i:58069

- Moussa, Pierre See Bassi, D., 85a:58053; 85i:58067 and Baker, George A., Jr.; et al., 85m:81032
- Nauenberg, M. See Manton, N. S., 85i:58069
- Niino, Kiyoshi On analytic mappings between two algebroid surfaces. 85k:30070
- Peitgen, H.-O. (with Saupe, Dietmar; von Haeseler, F.) Cayley's problem and Julia sets. 85h:58101
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- Praegman, C. The formal classification of linear difference operators. 85c:13000
- Rees, Mary Ergodic rational maps with dense critical point forward orbit. 85m:58111
- Sad, P. See Mañé, R.; et al., 85j:58089
- Saupe, Dietmar See Peitgen, H.-O.; et al., 85h:58101
- Shah, Swarupchand M. (with Wiener, Joseph) Distributional and entire solutions of ordinary differential and functional-differential equations. 85c:34010
- Shenker, Scott J. See Widom, Michael; et al., 85i:58073
- Sklar, A. Confluence and stability of orbits of quadratic polynomials. (Not in MR)
- Song, Guo Dong (with Yang, Chung Chun) Further growth properties of composition of entire and meromorphic functions. 85a:30044
- Strelits, Sh. Three theorems on the growth of entire transcendental solutions of algebraic differential equations. 85c:34006
- Sullivan, Dennis P. Conformal dynamical systems. 85m:58112
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- Selen, W. Absolutely continuous invariant measures for rational mappings of the sphere  $S^2$ . 85m:58113
- Toda, Nobushige On the conjecture of Gackstatter and Laine concerning the differential equation  $(w')^n = \sum_{j=0}^m a_j(z)w^j$ . 85d:34007
- Urabe, Hironobu On factorization of the Blaschke products. 85i:30066
- Widom, Michael Renormalization group analysis of quasiperiodicity in analytic maps. 85i:58082
- (with Bensimon, D.; Kadanoff, Leo P.; Shenker, Scott J.) Strange objects in the complex plane. 85i:58073
- Wiener, Joseph See Shah, Swarupchand M., 85c:34010
- Xiao, Xiu Zhi See He, Yu Zan, 85k:34011
- Yanagihara, Niro Hypertranscendence of solutions of some difference equations. 85c:12005
- Yang, Chung Chun See Song, Guo Dong, 85a:30044

### 30D10 Representations of entire functions by series and integrals

- Boydachiev, L. I. On the representation of entire functions by series of Laguerre polynomials. 85g:30042
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- Csordas, George See Craven, Thomas C., 85d:30031
- Edrei, Albert Zeros of sections of power series representing entire functions admissible in the sense of Hayman. 85k:30041
- Frolov, Yu. N. Conditions for representation of entire functions by series in eigenfunctions of a generalized differentiation operator. (Russian) 85h:30036
- Condition for the representability of entire functions by series of generalized exponents. (Russian) 85g:30043
- Khom'jak, M. M. A theorem of Wiman type for entire functions of zero order in Ritt's sense, given by Dirichlet series. (Ukrainian. Russian summary) 85e:30042
- Lahiri, B. K. See Masumdar, N. C., 85c:30043
- Leont'ev, A. F. Representation of entire functions by series in Mittag-Leffler functions. (Russian. English summary) 85g:30044
- Martirosoyan, V. M. A new proof of M. M. Dzhrbashyan's theorem on parametric representation of general classes of entire functions of finite order. (Russian. English and Armenian summaries) 85m:30020
- Masumdar, N. C. (with Lahiri, B. K.) Rearrangements of the coefficients of entire series. 85c:30043
- Nakhmetov, V. A. A class of rational interpolation series. (Russian. English and Azerbaijani summaries) 85g:30045
- Vaish, S. K. On the means of an entire Dirichlet series. 85a:30041
- Yi, Hong Xun The maximum term of an entire function defined by a Legendre series. (Chinese. English summary) 85k:30042

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- Blambert, Maurice (with Parvatham, R.) Sur une inégalité fondamentale et les singularités d'une fonction analytique définie par un élément LC-dirichletien. [A fundamental inequality and the singularities of an analytic function defined by an LC-Dirichlet element] 85m:30001
- Gal', Yu. M. The maximum term of a Dirichlet series that converges absolutely in a half plane. (Ukrainian. Russian summary) 85d:30032
- Genchev, T. G. Paley-Wiener type theorems for functions holomorphic in a half-plane. 85i:42014
- Gof'dberg, A. A. The growth of an entire function represented by a lacunary power series. (Russian) 85k:30045
- Gupta, Ved Parkash A remark on the means of entire Dirichlet series. 85i:30002
- He, Long Zhen On the  $P(R)$  order and  $P(R)$  type of analytic functions defined by Dirichlet series. (Chinese. English summary) 85a:30007
- Kasana, H. S. See Vaish, S. K., 85a:30009
- Katsnel'son, V. É. On the theory of entire functions of the Cartwright class. (Russian) 85j:30059
- Kimura, Shigeru A characterization of the exponential function by product. 85j:30060
- Korobelnik, Yu. F. Some representing systems in spaces of analytic functions. (Russian) 85b:30003
- Leont'ev, A. F. The domain of convergence of series of generalized exponentials. (Russian) 85a:30008
- Murai, Takafumi The deficiency of gap series. 85d:30039
- Ono, Takashi A generalization of Gauss' theorem on arithmetic-geometric means. 85d:33006



- Parvatham, R. See Blambert, Maurice, 85a:30081  
 Rafalyan, S. G. Interpolation and the property of being a basis in weighted classes of entire functions of exponential type. (Russian. English and Armenian summaries) 85g:30063  
 Rusev, Pet'ar K. Expansion of analytic functions in series of classical orthogonal polynomials. 85h:30005  
 Sodin, M. L. A remark on limit sets of subharmonic functions of natural order in a plane. (Russian) 85f:31003  
 Valsh, S. K. (with Kasana, H. S.) On the term by term product of two entire Dirichlet series. (Turkish summary) 85a:30009

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- Abi-Khusam, Faruk F. On the growth and deficiencies of meromorphic functions of positive integral order. 85k:30043  
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 Gal', Yu. M. The maximum term of a Dirichlet series that converges absolutely in a half plane. (Ukrainian. Russian summary) 85d:30033  
 Gleiser, E. V. (with Savchuk, Ya. I.) Coverings of planar sets. (Russian) 85j:30056  
 Gol'dberg, A. A. (with Eremenko, A. E.; Ostrovskii, I. V.) The sum of entire functions of completely regular growth. (Russian. English and Armenian summaries) 85a:30042  
 The growth of an entire function represented by a lacunary power series. (Russian) 85k:30045  
 Gramain, François (with Mignotte, Maurice) Fonctions entières arithmétiques. [Entire arithmetic functions] 85d:30033  
 Grishin, A. F. Sets of regular growth of entire functions. I. (Russian) 85j:30057  
 von Grudinski, Olaf Slowly decreasing entire functions and convolution equations. 85j:30058  
 Gu, Yong Xing See Li, Yi Nian, (Not in MR)  
 Iliev, L. G. Applications of Laguerre entire functions. 85f:30037  
 Jank, Gerhard See Bergweiler, Walter; et al., 85k:30044  
 Juneja, O. P. (with Srivastava, G. S.) A note on step functions with applications to entire and meromorphic functions. 85f:30038  
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 Katamel'son, V. E. On the theory of entire functions of the Cartwright class. (Russian) 85j:30059  
 Kimura, Shigeru A characterization of the exponential function by product. 85j:30060  
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 Kumar, Nareesh See Srivastava, G. S., 85c:30045; 85k:30047 and Valsh, S. K., 85k:30048  
 Li, Yi Nian (with Gu, Yong Xing) On the existence of Borel directions of algebroid functions. (Chinese)  
 Mal'utin, K. G. An interpolation problem in a class of entire functions of completely regular growth. (Russian. English summary) 85m:30021  
 Marchenko, I. I. (with Scherba, A. I.) Growth of entire functions. (Russian) 85i:30055  
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 Nandan, Krishna (with Awasthi, K. N.) On the growth of integral functions. 85f:30040  
 Ostrovskii, I. V. See Gol'dberg, A. A.; et al., 85a:30042  
 Parvatham, R. On the Ritt order of entire functions defined by  $L$ -Dirichletian elements. 85c:30025  
 Prather, C. L. Final sets for operators on real entire functions of order one, normal type. 85c:30043  
 Rossi, J. F. (with Williamson, Jack) The asymptotic behavior of functions extremal for Bernstein's  $\cos \beta \lambda$  theorem. 85c:30044  
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 Serykh, N. D. Bounded shifts of the set of roots of functions of class  $S_D$  that do not lead out of this class. (Russian) 85k:30046  
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 Shea, Daniel F. (with Wainger, Stephen) An application of singular integrals to a growth problem for entire functions of finite order. 85f:30041  
 Song, Guo Dong (with Yang, Chung Chun) Further growth properties of composition of entire and meromorphic functions. 85a:30044  
 Srivastava, G. S. (with Kumar, Nareesh) On the  $(p, q)$ -order and lower  $(p, q)$ -order of entire functions. 85c:30045  
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 Zhuang, Qi Tai On the comparative growth of the maximum modulus and the characteristic function of an entire function. (Chinese) (Not in MR)

## secondary classifications (30D15)

- Gramain, François Sur le théorème de Fukaawa-Gelfond-Gruman-Masser. [On the Fukaawa-Gelfond-Gruman-Masser theorem] 85d:11071  
 Juneja, O. P. (with Shah, Swarupchand M.) Univalent functions with univalent Gelfond-Leont'ev derivatives. 85i:30016  
 (Kahane, J.-P.) See Yu, Jia Rong, 85f:30005  
 Kapoor, G. P. (with Nautiyal, A.) On the approximation of generalized axisymmetric potentials. (Serbo-Croatian summary) 85h:35017  
 Lewis, John L. (with Rossi, J. F.; Weitsman, Allen) On the growth of subharmonic functions along paths. 85f:31002  
 Mokhon'ko, A. Z. A class of differential and functional equations. (Russian) 85d:34006  
 Monako, T. P. Growth of entire functions represented by a multidimensional Dirichlet series. (Russian) (See 85k:35001)  
 Nautiyal, A. A remark on the generalized order of an analytic function. 85b:30002  
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 Toppila, Sakari (with Winkler, Jörg) Some lower bounds for the maximal growth of the spherical derivative. 85f:30046  
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 Valsh, S. K. The mean value of an entire function represented by Dirichlet series. 85c:30005  
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## 30D20 Entire functions, general theory

- Blair, Charles E. (with Rubel, Lee A.) A universal entire function. 85a:30046  
 Giner, V. B. (with Podoshev, L. R.; Sodin, M. L.) Addition of lower indicators of entire functions. (Russian) 85f:30042  
 Johnston, Elgin On sets of range uniqueness. 85b:30038  
 Kumar, Nareesh See Srivastava, G. S., 85c:30047 and 85f:30043  
 Layman, J. W. (with Prather, C. L.) Generalized Bell numbers and zeros of successive derivatives of an entire function. 85c:30026  
 Petrenko, V. P. Algebraic differential equations that have meromorphic solutions. (Russian) 85g:30049  
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 Prather, C. L. See Layman, J. W., 85c:30026  
 Rubel, Lee A. See Blair, Charles E., 85a:30046  
 Sheremeta, M. N. Asymptotic properties of entire functions of slow growth represented by Dirichlet series. (Ukrainian. Russian summary) (Not in MR)  
 Real values of entire functions. (Ukrainian. Russian summary) (Not in MR)  
 Shkalikov, A. A. Zero distribution for pairs of holomorphic functions with applications to eigenvalue distribution. 85c:30046  
 Skaskiv, O. B. The Abel-Goncharov problem for entire functions. (Russian) 85c:30027  
 Sodin, M. L. See Giner, V. B.; et al., 85f:30042  
 Srivastava, G. S. (with Kumar, Nareesh) On means of entire functions having index pair  $(p, q)$ . 85f:30043  
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 Strelits, Sh. Asymptotic properties of entire transcendental solutions of algebraic differential equations. 85a:30047  
 Toda, Nobushige On an extension of the theorem of Tumura-Chunie. 85d:30035  
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 Urabe, Hironobu Primeness in divisor sense for certain entire functions. 85i:30056  
 Zhang, Guang Hou On entire functions extremal for Denjoy's conjecture. II. 85f:30050

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- Abian, Alexander A solvable case of an infinite system of infinite linear equations and two examples of applications. 85a:15004  
 Dzhirbashyan, M. M. Interpolation and spectral expansions associated with differential operators of fractional order. (Russian. English and Armenian summaries) 85k:30060

Edrei, Albert (with Saff, Edward B.; Varga, R. S.) ★ Zeros of sections of power series. 85g:30007

Zeros of sections of power series representing entire functions admissible in the sense of Hayman. 85k:30041

Epifanov, O. V. Multiplication operators in spaces of entire functions of finite order and operators of convolution type. (Russian) 85a:47033

Gundersen, Gary G. (with Yang, Chung Chun) On the preimage sets of entire functions. 85i:30058

Hayman, W. K. (with Rossi, J. F.) Characteristic, maximum modulus and value distribution. 85j:30064

Huo, Shou Cheng Application of entire functions to the summation of series. (Chinese) 85a:40001

Juneja, O. P. (with Srivastava, G. S.) A note on step functions with applications to entire and meromorphic functions. 85f:30038

Liverpool, L. S. O. (with Umar, Umaru) Some remarks on point Picard sets for entire functions. 85e:30049

Martynov, I. P. Necessary criteria for presence of solutions with given analytic properties. (Russian. English summary) 85m:34011

Nieto-Vesperinas, M. Inverse scattering problems: a study in terms of the zeros of entire functions. 85i:78022

Ronkin, A. L. Irreducibility of quasipolynomials. (Russian) 85e:33003

Rossi, J. F. See Hayman, W. K., 85j:30064

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- Burbea, Jacob (with Masani, P.) ★ Banach and Hilbert spaces of vector-valued functions. 85d:46050
- Chang, Sun-Yung A. (with Ciesielski, Z.) Spline characterizations of  $H^1$ . 85f:46051
- Ciesielski, Z. See Chang, Sun-Yung A., 85f:46051
- Duborija, Stojan Multipliers of  $D^p$  spaces. (Serbo-Croatian. English summary) 85f:46063
- Diagnidze, O. P. Some integral inequalities. (Russian) 85d:30003
- Farkov, Yu. A. Diameters of certain classes of analytic functions. (Russian) 85i:30074
- Fisher, S. D. ★ Function theory on planar domains. 85d:30001
- (with Micchelli, Charles A.) Optimal sampling of holomorphic functions. 85j:30005
- Hallenbeck, David J. Extreme points of subordination families with univalent majorants. 85j:30045
- Hasumi, Morisuke ★ Hardy classes on infinitely connected Riemann surfaces. 85k:30066
- Hoffman, Michael J. Norms of linear functionals on the space of bounded analytic functions on an annulus. 85i:46072
- Jevtić, M. See Ahern, Patrick R., 85j:30071
- Johnson, Raymond L. Definition of generalized Carleson measures and applications. 85m:42024
- von Keviczky, Attila B44a Besonderheiten radialwirkender linearer Integraloperatoren in  $H^p(\Pi_+)$ . [Characteristic features of radially acting linear integral operators in  $H^p(\Pi_+)$ ] 85e:47070
- Khavinson, D. Factorization theorems for different classes of analytic functions in multiply connected domains. 85j:30009
- Kim, Hong Oh Derivatives of Blaschke products. 85b:30045
- Krotov, V. G. Differential properties of boundary values of functions from Hardy classes. (Russian. English summary) 85m:42021
- Masani, P. See Burbea, Jacob, 85d:46050
- Mateljević, M. (with Pavlović, Miroslav) New proofs of the isoperimetric inequality and some generalizations. 85e:30001
- Micchelli, Charles A. See Fisher, S. D., 85j:30005
- Miyachi, Akihiko Notes on Fourier multipliers for  $H^p$ , BMO and the Lipschitz spaces. 85j:42029
- Nakai, Mitsuru Corona problem for Riemann surfaces of Parreau-Widom type. 85c:30047
- Nakazi, Takahiko Exposed points and extremal problems in  $H^1$ . 85f:46096
- Oswald, Peter On coefficient properties of power series. 85f:46052
- On Besov-Hardy-Sobolev spaces of analytic functions in the unit disc. 85f:46071
- Pavlović, Miroslav See Mateljević, M., 85e:30001
- Pekarskii, A. A. Rational approximations of the class  $H_p$ ,  $0 < p \leq \infty$ . (Russian. English summary) 85b:30054
- Saitoh, Saburo Some fundamental interpolation problems for analytic and harmonic functions of class  $L_2$ . 85e:30016
- Shields, Allen L. An analogue of the Fejér-Riesz theorem for the Dirichlet space. 85j:42039
- Sundberg, Carl Values of BMOA functions on interpolating sequences. 85j:46035
- Uchiyama, Akihito On BMO. (Japanese) 85j:42001
- Wojtaszczyk, P.  $H_p$ -spaces,  $p \leq 1$ , and spline systems. 85f:46053
- Yamashita, Shinji Hardy norm, Bergman norm, and univalence. 85f:30025
- Functions with  $H^p$  hyperbolic derivative. 85f:30055
- Zayed, Ahmed I. Topological vector spaces of analytic functions. 85b:46034

## 30D60 Quasianalytic and other classes of functions

## secondary classifications (30D60)

- Chernyavskii, A. G. Quasianalytic classes generated by hyperbolic operators with fixed coefficients in  $\mathbb{R}^2$ . (Russian) 85b:26023
- Gu, Yong Xing The growth of algebroid functions with several deficient values. 85d:30038

## 30D99 None of the above, but in this section

- Haruki, H. A generalization of the Nevanlinna-Pólya theorem in analytic function theory. 85b:30050
- Sedletskii, A. M. Decomposition of an analytic function into the sum of periodic functions. (Russian) 85k:30053

## secondary classifications (30D99)

- Hosain, Moqbul On defects and deviation quantities of multivectors. 85m:33004  
 Minda, David Bloch constants for meromorphic functions near an isolated singularity. 85c:30010  
 Ohta, Fumihisa A Carleson measure theorem for weighted Bergman spaces. 85c:30008  
 Rhyly, H. C., Jr. An averaging operator on the Dirichlet space. 85j:30106

## secondary classifications (30D99)

- Rippon, P. J. A final remark on infinite exponentials. (Not in MR)

## 30Exx Miscellaneous topics of analysis in the complex domain

## secondary classifications (30Exx)

- Schmupp, Walter \*Complex contour integral representation of cardinal spline functions. 85c:41020

## 30E05 Moment problems, interpolation problems

- Attela, M. On the convergence of complex interpolating spline functions of order  $m$  to a continuous function. 85h:30047  
 Ball, Joseph A. Interpolation problems of Pick-Nevalinna and Loewner types for meromorphic matrix functions. 85h:30044  
 Blatt, Hans-Peter Near circularity of the error curve and zeros of the error function for Chebyshev approximation on a disk. 85h:30048  
 Bruna, Joaquim (with Tugores Martorell, Francisco) Free interpolation for holomorphic functions regular to the boundary. 85h:30051  
 Clunie, J. (with Mason, J. C.) Norms of analytic interpolation projections on general domains. 85h:30053  
 Dubovoi, V. K. Indefinite metric in Schur's interpolation problem for analytic functions. I. (Russian) 85f:30060a  
 Indefinite metric in Schur's interpolation problem for analytic functions. II. (Russian) 85f:30060b  
 Eiermann, Michael (with Niethammer, W.) Interpolation methods for numerical analytic continuation. 85d:30060  
 Erdős, Paul Problems and results on polynomials and interpolation. 85i:30071  
 Globevnik, Josip Analyticity on rotation invariant families of curves. 85f:30090  
 Hermann, Thomas Some remarks on a theorem of Saff and Varga. 85d:30051  
 Jebelani, Petru On the dense divergence of Lagrange interpolation in a complex domain. 85h:30051  
 Kovachev, R. K. Zerlegung der holomorphen Funktionen in Interpolationsreihen nach den Einheitswurzeln. [Decomposition of holomorphic functions in interpolation series based on the roots of unity] 85i:30072  
 Lavrent'ev, M. M. Interior problems for differential equations. (Russian) 85j:30075  
 Mason, J. C. See Clunie, J., 85h:30053  
 Meyer, Michael Triangular Interpolation. (English summary) [Triangular interpolation] 85j:30076  
 Nadbitova, N. S. A class of convergence of a Newtonian  $(B, \Gamma)$ -interpolation process. (Russian) 85h:30049  
 Niethammer, W. See Eiermann, Michael, 85d:30060  
 Oyma, Kunt An interpolation theorem for  $H_F^2$ . 85c:30060  
 Rafailyan, S. G. Interpolation and the property of being a basis in weighted classes of entire functions of exponential type. (Russian. English and Armenian summaries) 85g:30063  
 Rukhin, S. E. Interpolation with unbounded multiplicities in finitely connected domains in the complex plane. (Russian. English and Armenian summaries) 85h:30050  
 Rusakovskii, A. M. Interpolation in a class of entire functions having an indicator not higher than a given one. (Russian) 85c:30038  
 Saff, Edward B. (with Varga, R. S.) A note on the sharpness of J. L. Walsh's theorem and its extensions for interpolation in the roots of unity. 85g:30064  
 Saxena, R. B. (with Sharma, Ambikeshwar; Ziegler, Z.) Hermite-Birkhoff interpolation on roots of unity and Walsh equiconvergence. 85g:30065  
 Schiff, J. L. (with Walker, W. J.) Finite harmonic and geometric interpolation. 85g:30066  
 Sharma, Ambikeshwar (with Vértési, P.) Mean convergence and interpolation in roots of unity. 85h:30061  
 See also Saxena, R. B.; et al., 85g:30065  
 Stolbov, V. N. Interpolation by analytic functions with a finite number of singularities at points of a geometric progression. (Russian) 85f:30062  
 Tugores Martorell, Francisco Interpolation sets for Lipschitz holomorphic functions. (Spanish. English summary) 85j:30077  
 See also Bruna, Joaquim, 85h:30051  
 Varga, R. S. See Saff, Edward B., 85g:30064  
 Vértési, P. Divergence of Lagrange interpolation (complex and trigonometric cases). 85d:30063  
 See also Sharma, Ambikeshwar, 85h:30061  
 Vinogradov, S. A. Some remarks on free interpolation by bounded and slowly growing analytic functions. (Russian. English summary) 85d:30053  
 Walker, W. J. See Schiff, J. L., 85g:30066  
 Wallin, H. Divergence of multipoint Padé approximation. 85h:30066  
 Ziegler, Z. See Saxena, R. B.; et al., 85g:30065

## secondary classifications (30E05)

- (Ando, Tsuyoshi) See Kovalishina, I. V., 85c:47019  
 Barnsley, M. F. (with Harrington, A. N.) Moments of balanced measures on Julia sets. 85j:30063  
 Barugyan, G. A. Necessary condition for existence of the solution of the general interpolation problem. (Russian. English and Armenian summaries) 85m:30023

- Berenstein, Carlos A. (with Yger, A.) Le problème de la déconvolution. [The deconvolution problem] 85i:46048  
 Berg, Christian (with Christensen, Jens Peter Reus) Exponents critiques dans le problème des moments. (English summary) [Critical exponents in the moment problem] 85a:44004  
 Bratskhovich, A. V. One type of lower bound of entire functions of finite order and some applications. (Russian) 85g:30046  
 Christensen, Jens Peter Reus See Berg, Christian, 85a:44004  
 Cwikel, Michael (with Fisher, S. D.) Complex interpolation spaces on multiply-connected domains. 85j:46130  
 Dervis, A. O. (with Khavin, V. P.) Free interpolation and the Dirichlet problem. (Russian. English summary) 85j:31003  
 Dym, Harry (with Gohberg, Israel) On unitary interpolants and Fredholm infinite block Toeplitz matrices. 85d:47028  
 Dzhurashyan, M. M. Interpolation and spectral expansions associated with differential operators of fractional order. (Russian. English and Armenian summaries) 85k:30060  
 Fisher, S. D. See Cwikel, Michael, 85j:46130  
 Gohberg, Israel See Dym, Harry, 85d:47028  
 Golinskii, L. B. A generalization of the matrix Nevanlinna-Pick problem. (Russian. English and Armenian summaries) 85g:47049  
 Goodman, T. N. T. (with Sharma, Ambikeshwar) Convergence of multivariate polynomials interpolating on a triangular array. 85c:41003  
 Grishin, A. F. Sets of regular growth of entire functions. I. (Russian) 85j:30057  
 Harrington, A. N. See Barnsley, M. F., 85j:30063  
 Khavin, V. P. See Dervis, A. O., 85j:31003  
 Khelifa, A. Ya. (with Yuditaki, P. M.) Interpolation of an operator that commutes with truncated shift, by functions of Schur's class. I. (Russian) 85i:47030  
 Klunick, A. A. (with Makarov, Vladimir Leonidovich) Convergence of an interpolation process for an  $x^2$ -analytic function. (Russian) 85h:30062  
 Kovalishina, I. V. (with Potapov, V. P.) \*Integral representation of Hermitian positive functions. 85c:47019  
 Makarov, Vladimir Leonidovich See Klunick, A. A., 85h:30062  
 Mal'utin, K. G. An interpolation problem in a class of entire functions of completely regular growth. (Russian. English summary) 85m:30021  
 Malozhko, A. N. A convergent quadrature process for Schwarz and Hilbert integrals. (Russian. English summary) 85h:35056  
 Nakhmetov, V. A. A class of rational interpolation series. (Russian. English and Azerbaijani summaries) 85g:30045  
 Nencliu, G. (with Rasche, G.) A Loewner-type interpolation problem applied to partial-wave dispersion relations. 85i:81122  
 Peller, V. V. Description of Hankel operators of the class  $\mathcal{S}_p$  for  $p > 1$ , investigation of the rate of rational approximation and other applications. (Russian) 85g:47041  
 Potapov, V. P. See Kovalishina, I. V., 85c:47019  
 Rasche, G. See Nencliu, G., 85i:81122  
 Saltoh, Saburo Some fundamental interpolation problems for analytic and harmonic functions of class  $L_2$ . 85c:30016  
 Sharma, Ambikeshwar See Goodman, T. N. T., 85c:41003  
 Szabados, J. Converse results in the theory of overconvergence of complex interpolating polynomials. 85c:30003  
 Szász, F. H. Interpolation and domination by positive definite kernels. 85h:32021  
 Trautner, R. Moment multipliers for power series. (Russian summary) 85i:30001  
 Vasyunin, V. I. Traces of bounded analytic functions on finite unions of Carleson sets. (Russian. English summary) 85d:30049  
 Characterization of finite unions of Carleson sets in terms of solvability of interpolation problems. (Russian. English summary) 85c:30037  
 Yger, A. See Berenstein, Carlos A., 85i:46048  
 Yuditaki, P. M. See Khelifa, A. Ya., 85i:47030  
 Zabulonis, A. Conditions for separation of points in the unit disk. (Russian. English and Lithuanian summaries) 85f:30058

## 30E10 Approximation in the complex domain

- Aljarrah, Radwan On the Lagrange interpolation polynomials of entire functions. 85i:30073  
 Andrievskii, V. V. Uniform convergence of Bieberbach polynomials in domains with piecewise-quasiconformal boundary. (Russian) 85d:30054  
 Arakelyan, N. U. (with Gauthier, P. M.) On tangential approximation by holomorphic functions. (Russian and Armenian summaries) 85c:30039  
 Attela, M. (with Fage, C.; Gaches, J.) Étude et convergence de fonctions "spline" complexes. (English summary) [Study and convergence of complex spline functions] 85h:30052  
 BBS, V. I. Quasiconformal extension and approximation of functions. (Russian) 85a:30069  
 Bolvin, André On Carleman approximation by meromorphic functions. 85k:30057  
 Eiermann, Michael On the convergence of Padé-type approximants to analytic functions. 85c:30061  
 Ellacott, S. W. (with Gutknecht, M. H.) The polynomial Carathéodory-Fejér approximation method for Jordan regions. 85j:30078  
 (with Gutknecht, M. H.) The Carathéodory-Fejér extension of a finite geometric series. 85j:30079  
 Fage, C. See Attela, M.; et al., 85h:30052  
 Farkov, Yu. A. Diameters of certain classes of analytic functions. (Russian) 85i:30074  
 Fernström, Claes Some remarks on the space  $R^2(E)$ . 85c:30040  
 Fuchs, W. H. J. (with Gonchar, A. A.) Approximation of entire functions on unbounded continua. 85d:30055  
 Gaches, J. See Attela, M.; et al., 85h:30052  
 Galer, Dieter \*Fubian hanhu bijinjun. (Chinese) [Lectures on approximation in the complex domain] (Not in MR)  
 Gauthier, P. M. See Arakelyan, N. U., 85c:30039  
 Gonchar, A. A. See Fuchs, W. H. J., 85d:30055

- Gutknecht, M. H. (with Trefethen, Lloyd N.) Nonuniqueness of best rational Chebyshev approximations on the unit disk. **85d:30066**  
 See also Ellacott, S. W., **85j:30078** and **85j:30079**
- Hwang, Jun Shung Chebyshev rational approximations to functions holomorphic in disk. **85m:30027**
- van Iseghem, Jeannette Padé-type approximants of  $\exp(-z)$  whose denominators are  $(1+z/n)^n$ . **85d:30057**
- Ismailov, A. Ya. (with Tagieva, M. A.) The rate of approximation of generalized analytic functions in a closed domain. (Russian) **85j:30080**
- Kallin, S. I. Approximation of the solution of a homogeneous convolution equation whose characteristic function satisfies lower estimates. (Russian) **85d:30058**
- Khavinson, D. Sets of finite perimeter, Cauchy integrals and rational approximation. **85j:30081**
- Konvalov, V. N. Approximation characteristics of certain classes of functions of a complex variable. (Russian) **85e:30063**
- Lubinsky, D. S. On convergence of rational and best rational approximations. **85e:30041**
- Lungu, K. N. Properties of functions arising from the asymptotic behavior of poles of rational functions of best approximation. (Russian) **85d:30069**  
 Best approximations by rational functions with a fixed number of poles. (Russian) **85g:30067**
- Maier, F. F. Sharp estimates for functions regular in the disc. (Russian) (See **85d:00005**)
- Matsuoka, Cho-ichiro A note on Mergelyan's theorem. **85e:30043**
- Memke, Klaus On Tauji points in a continuum. **85e:30063**
- Mirolyubov, A. A. On the question of approximation of the solution of a generalized convolution equation. (Russian) **85g:30068**
- Nautiyal, A. (with Rizvi, S. R. H.) On the approximation of an analytic function in  $L^p$ -norm. **85g:30060**
- Nuttall, J. The asymptotic behavior of Hermite-Padé polynomials. **85b:30052**
- O'Farrell, A. G. (with Prekenis, K. J.) Approximation by polynomials in two diffeomorphisms. **85b:30053**
- Pekarskiĭ, A. A. Rational approximations of the class  $H_p$ ,  $0 < p \leq \infty$ . (Russian. English summary) **85b:30054**
- Prekenis, K. J. See O'Farrell, A. G., **85b:30053**
- Prokhorov, V. A. Chebyshev rational approximations of analytic functions. (Russian) **85g:30070**  
 See also Vavilov, V. V.; et al., **85h:30053**
- Rivlin, T. J. (with Ruscheweyh, St.; Shaffer, Dorothy Browne; Wirths, K.-J.) Optimal recovery of the derivative of bounded analytic functions. **85e:30064**
- Rivlin, T. J. See Nautiyal, A., **85g:30069**
- Ruscheweyh, St. See Rivlin, T. J.; et al., **85e:30064**
- Shaffer, Dorothy Browne See Rivlin, T. J.; et al., **85e:30064**
- (Shen, Xie Chang) See Gaier, Dieter, (Not in MR)
- Shirokov, N. A. A theorem of A. G. Vitushkin. (Russian. English summary) **85k:30058**
- Suetin, S. P. See Vavilov, V. V.; et al., **85h:30053**
- Tagieva, M. A. See Ismailov, A. Ya., **85j:30080**
- Trefethen, Lloyd N. See Gutknecht, M. H., **85d:30066**
- Vavilov, V. V. (with Prokhorov, V. A.; Suetin, S. P.) Poles of the  $m$ th line of a Padé table and singular points of a function. (Russian) **85h:30053**
- Wirths, K.-J. See Rivlin, T. J.; et al., **85e:30064**
- Wu, Xue Mou Error transform analysis of Faber series. (Chinese) (Not in MR)
- Wynn, P. The convergence of approximating fractions. **85e:30065**

## secondary classifications (30E10)

- Aguilera-Navarro, M. C. K. See Aguilera-Navarro, V. C., **85a:41019**
- Aguilera-Navarro, V. C. (with Aguilera-Navarro, M. C. K.) On the zeroes of infinite series. **85a:41019**
- Bardinaĭskii, V. V. Strongly local theorems on approximation of periodic functions. **85j:42002**
- Blambert, Maurice (with Chevalier, Georges) Sur les fonctions de Tchebysheff au sens de Hille. [On Chebyshev functions in the sense of Hille] **85f:41022**
- Bolvin, André (with Gauthier, P. M.) Approximation harmonique sur les surfaces de Riemann. [Harmonic approximation on Riemann surfaces] **85i:30083**
- Bultheel, A. Zeros of a rational function  $d$ -fixed by its Laurent expansion. **85m:30002**
- Buslaev, V. I. (with Gonchar, A. A.; Suetin, S. P.) Convergence of subsequences of the  $m$ th row of a Padé table. (Russian) **85c:41026**
- Chalmers, B. L. See Mason, J. C., **85f:41015**
- Chen, Hual Hui On Bers's approximation theorem. (Chinese. English summary) **85h:40042**
- Chevalier, Georges See Blambert, Maurice, **85f:41022**
- Clunie, J. (with Mason, J. C.) Norms of analytic interpolation projections on general domains. **85k:30055**
- Della Dora, J. (with Dicrescenzo, C.) Approximants de Padé-Hermite. I. Théorie. (English summary) [Padé-Hermite approximants. I. Theory] **85f:85006a**  
 (with Dicrescenzo, C.) Approximants de Padé-Hermite. II. Programmation. (English summary) [Padé-Hermite approximants. II. Programming] **85f:85006b**
- Dicrescenzo, C. See Della Dora, J., **85f:85006a** and **85f:85006b**
- Ellacott, S. W. On Faber polynomials and Chebyshev polynomials. **85h:30006**
- Gauthier, P. M. See Bolvin, André, **85i:30083**
- Gautschi, Walter On Padé approximants associated with Hamburger series. **85f:41012**
- Gonchar, A. A. See Buslaev, V. I.; et al., **85c:41026**
- Gutknecht, M. H. See Trefethen, Lloyd N., **(85g:41002)**
- Henrici, Peter Topics in computational complex analysis. III. The asymptotic behavior of best approximations to analytic functions on the unit disk. **85i:85035c**
- Iliev, L. G. Applications of Laguerre entire functions. **85f:30037**
- Karup, E. V. Local inversion of a theorem of Kellogg type. (Russian) **85d:30014**
- Khadshilaki, V. Kh. The best approximation in the mean on the real axis by entire functions. (Russian) **85g:41034**
- Liao, Luby On a minimax formula of Leja's. **85g:30038**

- Luh, W. (with Trautner, R.) On the rareness of summability methods which are effective for power series. **85h:40006**
- Lutterodt, C. H. On a partial converse of the Montessus de Ballore theorem in  $C^n$ . **85h:32005**
- Mamedkhanov, Dzh. I. Singular operators in problems of rational approximation. (Russian) **85g:41023**
- Mason, J. C. (with Chalmers, B. L.) Near-best  $L_p$  approximations by Fourier, Taylor and Laurent series. **85f:41015**  
 See also Clunie, J., **85k:30055**
- Mekhtiev, G. D. (with Tagieva, M. A.) Convergence of generalized Lagrange interpolation polynomials. (Russian) **85g:41008**
- Nautiyal, A. (with Shukla, D. P.) On the approximation of an analytic function by exponential polynomials. **85d:30006**
- O'Farrell, A. G. Qualitative rational approximation on plane compacta. **86e:40024**
- Parfenov, O. G. Faber polynomials and widths of Smirnov classes in an integral metric. (Russian. English summary) **85i:41031**
- Phillips, G. M. Archimedes and the complex plane. **85h:40003**
- Schneider, Gerald Approximation auf abgeschlossenen Teilen Riemannscher Flächen. (English summary) [Approximation on closed sets of Riemann surfaces] **85m:30032**
- Shawyer, Bruce L. R. (with Tomm, Ludwig) Analytic continuation of power series by regular generalized weighted means. **85e:30005**
- Shukla, D. P. See Nautiyal, A., **85d:30006**
- Srivastava, G. S. The degree of convergence for entire functions of slow growth. **85d:30034**
- Suetin, S. P. Poles of the  $m$ th row of a Padé table. (Russian) **85d:41016**  
 See also Buslaev, V. I.; et al., **85c:41026**
- Taberaki, Roman One-sided approximation by entire functions. **85m:41034**
- Tagieva, M. A. See Mekhtiev, G. D., **85g:41008**
- Temlyakov, V. N. Relations between best approximations of functions analytic in the disk. (Russian) **85h:32007**
- Tomm, Ludwig (with Trautner, R.) A universal power series for approximation of measurable functions. **85e:30004**  
 See also Shawyer, Bruce L. R., **85e:30005**
- Trautner, R. See Tomm, Ludwig, **85e:30004** and Luh, W., **85h:40006**
- Trefethen, Lloyd N. (with Gutknecht, M. H.) Real and complex Chebyshev approximation on the unit disk and interval. (See **85g:41002**)  
 Circularity of the error curve and sharpness of the CF method in complex Chebyshev approximation. **85f:41011**  
 The asymptotic accuracy of rational best approximations to  $e^z$  on a disk. **85j:41031**
- Verdera, Joan Approximation by rational modules in Sobolev and Lipschitz norms. **85j:46090**
- Wallin, H. Divergence of multipoint Padé approximation. **85k:30056**
- Zhamsoev, B. Ts. Estimates of stability in problems of analytic continuation. (Russian) **85j:30022**
- Zhu, Fu Liu The weighted approximation of certain complex functions of two variables. (Chinese) **85b:32024**

## 30E15 Asymptotic representations in the complex domain

- Yu, Xiu Yuan A criterion for transcendence of a class of functions. (Chinese) (Not in MR)

## secondary classifications (30E15)

- Fernández Castillo, M. Asymptotic expansions in a dense countable subset of points of the boundary of the domain. (Spanish. English summary) **85e:46019**

## 30E20 Integration, integrals of Cauchy type, integral representations of analytic functions [See also 45Exx.]

- Abdullaev, F. A. A double singular integral with Cauchy kernels in moduli of smoothness. (Russian) **85j:30082**
- Alekna, P. (with Govorov, N. V.) Asymptotic behavior of a Cauchy-type integral with monotone density of zero refined order. (Russian. English and Lithuanian summaries) **85a:30060**
- Anastasselou, E. G. (with Ioakimidis, N. I.) A new method for obtaining exact analytical formulae for the roots of transcendental functions. **85i:30075**
- Batchaev, I. M. (with Mamedkhanov, Dzh. I.) Limit values of a double integral of Cauchy type in domains with a quasiconformal boundary. (Russian) **85f:30063**  
 (with Bostanov, R. Yu.) Boundary properties of analytic functions in unbounded domains with a quasiconformal boundary. (Russian) **85f:30064**
- Belyi, V. I. (with Gridasova, I. V.) An analogue of an integral of Cauchy type in domains with quasiconformal boundary. (Russian. English summary) **85k:30059**
- Boas, Mary L. (with Boas, R. P.) A remark on principal-value integrals. **85e:30066**
- Boas, R. P. See Boas, Mary L., **85e:30066**
- Bostanov, R. Yu. See Batchaev, I. M., **85f:30064**
- (Deng, Yue Hua) See Zhang, Shi Xun, **85j:30083**
- Dzhrbaĭlyan, M. M. Interpolation and spectral expansions associated with differential operators of fractional order. (Russian. English and Armenian summaries) **85k:30060**
- Faĭsullaeva, B. Estimates for a one-dimensional singular integral along an open curve. (Russian) **85a:30061**
- Govorov, N. V. (with Grushevskii, S. P.) Some metric properties of boundary values of Schwarz integrals of finite Borel measures. (Russian) **85d:30060**  
 See also Alekna, P., **85a:30060**
- Gridasova, I. V. See Belyi, V. I., **85k:30059**
- Grushevskii, S. P. See Govorov, N. V., **85d:30060**
- Gustafsson, Björn Quadrature identities and the Schottky double. **85g:30071**
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Mekhtiev, G. D. The connection between growth and number of zeros of a generalized analytic function. (Russian) **85b:30060**

Pakhareva, N. A. (with Aleksandrovich, I. N.) Integral representation of  $p$ -wave functions with characteristic  $p = e^{i\alpha} y^k$ . (Russian) **85e:30085**

Pokashev, V. V. A boundary value problem of linear conjugation for singly-periodic polyanalytic functions. (Russian) **85j:30101**

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Toner, Toma V. A generalized-analytic variant of the Dolzhenko uniqueness boundary theorem for analytic functions. (Russian) **85g:30084**

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Crăciun, Silviu Homéomorphismes quasi-conformes sur des espaces localement convexes. [Quasiconformal homeomorphisms on locally convex spaces] **85h:46007**

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Kurbanov, M. A boundary value problem for a vector holomorphic in a half space. (Russian) **85e:35038**

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- Tokibetov, Zh. A. The space of power-increasing solutions of an elliptic system. (Russian. Kazakh summary) 85j:30098
- Vesentini, Edoardo Carathéodory distances and Banach algebras. 85b:32041
- Nonsubharmonicity of the Hausdorff distance. (Italian summary) 85k:31002

### 30G35 Functions of hypercomplex variables and generalized variables

- Brackx, F. (with Delanghe, Richard; Sommen, F.) ★ Clifford analysis. 85j:30103
- (with Delanghe, Richard; Sommen, F.) Cauchy-Kowalewski theorems in Clifford analysis: a survey. 85i:30091
- Burel, Jarolim Some integral formulas in complex Clifford analysis. 85i:30092
- Delanghe, Richard See Brackx, F.; et al., 85i:30091 and 85j:30103
- Laville, Guy Un lien entre l'équation de l'élasticité et l'analyse complexe. (English summary) [A link between the elasticity equation and harmonic analysis] 85h:30061
- Mitka, Jiri Regular functions of complex quaternionic variable. 85f:30088
- Ryan, John Special functions and relations within complex Clifford analysis. I. 85b:30086
- Properties of isolated singularities of some functions taking values in real Clifford algebras. 85b:30067
- Shilnits, V. A. See Stei'mashuk, N. T., 85j:30104
- Sommen, F. Microfunctions with values in a Clifford algebra I. 85h:30062
- See also Brackx, F.; et al., 85i:30091 and 85j:30103
- Soutek, V. Holomorphicity in quaternionic analysis. (See 85h:14002)
- Complex quaternionic analysis, connection to math. physics. (See 85h:14002)
- Cauchy integral formula. (See 85h:14002)
- Stei'mashuk, N. T. (with Shilnits, V. A.) A generalization of the Cauchy formula for hypercomplex  $F$ -monogenic functions. (Russian. English summary) 85j:30104
- Tonev, Toma V. Algebras of generalized analytic functions. 85k:30073
- Tutschke, Wolfgang Cauchy problems with monogenic initial values. 85h:30063
- Xu, Zhen Yuan The oblique derivative problem for generalized hyperanalytic functions. (Chinese. English summary) 85g:30085

#### secondary classifications (30G35)

- Buchanan, James L. See Gilbert, R. P., 85d:35035
- Gilbert, R. P. (with Buchanan, James L.) ★ First order elliptic systems. 85d:35035
- Guo, Ben Yu (with Mao, De Kang; Tang, Yun; He, Guo Qiang) A class of analytic problems in normed rings. (Chinese. English summary) 85j:30105
- He, Guo Qiang See Guo, Ben Yu; et al., 85j:30105
- Kovalev, V. F. (with Mel'nichenko, I. P.) Biharmonic algebras and the geometry of the domain of a boundary value problem. (Russian. English summary) 85e:31005
- Mao, De Kang See Guo, Ben Yu; et al., 85j:30105
- Mel'nichenko, I. P. See Kovalev, V. F., 85c:31005
- Ryan, John Singularities and Laurent expansions in complex Clifford analysis. 85a:32005
- Cauchy-Kowalewski extension theorems and representations of analytic functions acting over special classes of real  $n$ -dimensional submanifolds of  $C^{n+1}$ . 85k:32029
- Soutek, V.  $H$ -valued differential forms on  $H$ . 85h:58013
- Tang, Yun See Guo, Ben Yu; et al., 85j:30105
- Tse, Hsiung Chia (with Wu, Yong Shi) Infinite number of local conservation laws for the self-dual  $SU(2)$  Yang-Mills system within 't Hooft's ansatz. 85b:81135
- Wu, Yong Shi See Tse, Hsiung Chia, 85b:81135

### 30G99 None of the above, but in this section

#### secondary classifications (30G99)

- Chekmarev, D. T. A three-dimensional analogue of the Schwarz problem. (Russian) 85m:35048
- Chernyshev, A. P. Fundamental solutions for the potential of generalized Cauchy-Riemann systems of a certain class. (Russian) 85b:35013
- Ha Huy Khoai  $p$ -adic interpolation and continuation of  $p$ -adic functions. 85m:11064
- Ivanov, O. V. On the theory of mappings of plane domains with variable boundaries. (Russian) 85d:30042

### 30H05 Spaces and algebras of analytic functions [See also 32E25, 46Exx, 46J15.]

- Burbea, Jacob The Bergman and Schiffer transforms on weighted norm spaces. 85b:30064
- Cass, F. P. (with Trautner, R.) An extension of Wiener's lemma to Banach algebra valued functions. 85b:30068
- Deeb, W. (with Khalil, Roshdi; Younis, R.) The weak Behrens' property and the corona. 85k:30074
- Dutta, Salila On certain classes of analytic functions. 85g:30086
- Guo, Ben Yu (with Mao, De Kang; Tang, Yun; He, Guo Qiang) A class of analytic problems in normed rings. (Chinese. English summary) 85j:30105
- He, Guo Qiang See Guo, Ben Yu; et al., 85j:30105
- Khalil, Roshdi See Deeb, W.; et al., 85k:30074
- Kirjackis, Edward G. (with Mielauskas, J.) An invariant property of linear-fractional functions. (Russian. English and Lithuanian summaries) 85f:30089
- Mao, De Kang See Guo, Ben Yu; et al., 85j:30105
- Mielauskas, J. See Kirjackis, Edward G., 85f:30089
- Ohya, Fumimasa A Carleson measure theorem for weighted Bergman spaces. 85e:30086
- Rhaly, H. C., Jr. An averaging operator on the Dirichlet space. 85j:30106
- Solov'ev, A. A. Continuity of the harmonic projection in  $L^p$ -spaces. (Russian. English summary) 85g:30087
- Tang, Yun See Guo, Ben Yu; et al., 85j:30105
- Trautner, R. See Cass, F. P., 85b:30068

- Younis, R. See Deeb, W.; et al., 85k:30074

#### secondary classifications (30H05)

- Agarwal, Ratan P. (with Srivastava, Rajiv K.) On the space  $G(\lambda)$  of entire functions. 85d:46071
- Bourgain, J. On the primarity of  $H^\infty$ -spaces. 85c:46051
- de Branges, Louis The comparison theorem for Hilbert spaces of entire functions. 85c:47029
- Dutta, Salila See Srivastava, P. D.; et al., 85j:46034
- (Dyn'kin, E. M.) See Garnett, John B., 85j:30072
- Dahvarsheshvili, I. A. Analytic functions in the unit disk. (Russian. English and Georgian summaries) 85d:30040
- Estévez Toranzo, Margarita A square summable topology in the space of entire functions on a sequence space. (Spanish. English summary) 85j:46076
- (Euler, Leonhard) See Sreenivasulu, V., 85a:30075
- Fernström, Claes Some remarks on the space  $R^2(E)$ . 85c:30040
- Garnett, John B. ★ Ограниченные аналитические функции. (Russian) [Bounded analytic functions] 85j:30072
- Girvin, S. M. (with Jach, Terrence) Formalism for the quantum Hall effect: Hilbert space of analytic functions. 85c:81054
- Gorin, E. A. How does the spectrum of an endomorphism of the disk algebra look? (Russian. English summary) 85c:46052
- Gorkin, Pamela Decompositions of the maximal ideal space of  $L^\infty$ . 85a:46028
- Guadalupe Hernandez, José Javier Invariant subspaces in  $L^p(w)$  ( $0 < p < \infty$ ). 85g:30062
- Jach, Terrence See Girvin, S. M., 85c:81054
- Janas, Jan A note on invariant subspaces under multiplication by  $z$  in Bergman space. 85f:47032
- Kamthan, P. K. (with Singh Gautam, S. K.) On bases in the spaces of Dirichlet transformations of finite order  $\rho$ . 85e:30006
- Kankurikar, R. S. On a generalization of Iyer's space of integral functions. II. 85g:46031
- (Khavin, V. P.) See Garnett, John B., 85j:30072
- Kumagai, Donna Multidimensional analytic structure and Shilov boundaries. 85k:46060
- Kusunoki, Yukio (with Taniguchi, Masahiko) Remarks on functions of bounded mean oscillation on Riemann surfaces. 85a:30069
- Lévhana, G. D. Linear functionals over Lipschitz spaces of holomorphic functions in the unit disc. (Russian) 85c:46023
- Linchuk, N. E. (with Linchuk, S. S.) A class of operator equations in analytic spaces. (Russian) 85m:47028
- Linchuk, S. S. See Linchuk, N. E., 85m:47028
- Matsuugu, Yasuo The inclusion relation between the Bergman spaces  $A^p(U)$ , the Hardy spaces  $H^p(U)$  and the Nevanlinna space  $N(U)$  on the open unit disc  $U$  in  $C$ . 85i:30069
- Meise, Reinhold Structure of closed linear translation invariant subspaces of  $A(C)$  and kernels of analytic convolution operators. 85m:47030
- Nagnibida, N. I. (with Nastaiev, P. P.) Strongly cyclic elements of certain operators in spaces of analytic functions. (Russian) 85e:47046
- Nakasi, Takahiko Algebras generated by  $z$  and an inner function. 85h:46076
- Nanda, Sudarsan See Srivastava, P. D.; et al., 85j:46034
- Nastaiev, P. P. See Nagnibida, N. I., 85e:47046
- Ricci, F. (with Tableson, Mitchell) Boundary values of harmonic functions in mixed norm spaces and their atomic structure. 85m:30025
- Shamoyan, F. A. Division theorems and closed ideals in the algebras of analytic functions. (See 85h:00009)
- Shirokov, N. A. Properties of the moduli of analytic functions that are smooth up to the boundary. (Russian) 85c:46025
- Singh Gautam, S. K. See Kamthan, P. K., 85e:30006
- Sreenivasulu, V. A metric for non-Archimedean entire functions. 85a:30075
- Srivastava, P. D. (with Nanda, Sudarsan; Dutta, Salila) On certain paranormed function spaces. 85j:46034
- Srivastava, Rajiv K. See Agarwal, Ratan P., 85d:46071
- Tableson, Mitchell See Ricci, F., 85m:30025
- Taniguchi, Masahiko See Kusunoki, Yukio, 85a:30069
- Tolokonnikov, V. A. See Vol'berg, A. L., 85f:46097
- Tonev, Toma V. Algebras of generalized analytic functions. 85k:30073
- Vol'berg, A. L. (with Tolokonnikov, V. A.) Some remarks on multipliers of integrals of Cauchy type and Sarason algebras. (Russian) 85f:46097
- Yamashita, Shinji F. Riesz's decomposition of a subharmonic function, applied to BMOA. (Italian summary) 85g:31001
- Younis, R. Distance estimates and products of Toeplitz operators. 85i:46073
- Zayed, Ahmed I. Topological vector spaces of analytic functions. 85b:46034

### 31-XX POTENTIAL THEORY (For probabilistic potential theory, see 60J45.)

#### 31-02 Advanced exposition (research surveys, monographs, etc.)

- Doob, J. L. ★ Classical potential theory and its probabilistic counterpart. 85k:31001

#### secondary classifications (31-02)

- Dellacherie, C. (with Meyer, Paul-André) ★ Probabilities and potential. B. 85e:60001
- Gol'dshein, V. M. ★ Теоремы вложения, продолжения и емкость. (Russian) [Embedding and extension theorems, and capacity] 85m:46031b
- (with Reshetnyak, Yu. G.) ★ Введение в теорию функций с обобщенными произвольными и квазиконформными отображениями. (Russian) [Introduction to the theory of functions with generalized derivatives, and quasiconformal mappings] 85m:46031a
- Meyer, Paul-André See Dellacherie, C., 85e:60001



Raschtyak, Yu. G. See Gol'dshein, V. M., 85m:46031a  
(Wilson, J. P.) See Dellacherie, C., 85e:60001

### 31-03 Historical (must also be assigned at least one classification number from Section 01)

Netuka, Ivan (with Vesely, Jirf) Integral equations in potential theory. (Czech) 85b:31001

Vesely, Jirf See Netuka, Ivan, 85b:31001

### 31-06 Proceedings, conferences, etc.

#### secondary classifications (31-06)

(Andrian Casacu, Cabiria) See Seminar: Romanian-Finnish, complex analysis, 85h:00013a and 85h:00013b

(Boboc, N.) See Seminar: Romanian-Finnish, complex analysis, 85h:00013a and 85h:00013b

(Jurcsacu, M.) See Seminar: Romanian-Finnish, complex analysis, 85h:00013a and 85h:00013b

(Sucu, I.) See Seminar: Romanian-Finnish, complex analysis, 85h:00013a and 85h:00013b

Bucharest ★ Complex analysis—fifth Romanian-Finnish seminar. Part 1. 85h:00013a

Seminar:

Romanian-Finnish, complex analysis ★ Complex analysis—fifth Romanian-Finnish seminar. Part 1. 85h:00013a

## 31Axx Two-dimensional theory

### 31A05 Harmonic, subharmonic, superharmonic functions

Benigajsky, L. I. Logarithmically subharmonic functions in the complex plane, integrable on a sequence of points of the real axis. (Russian) 85d:31001

Fenton, P. C. Small subharmonic functions. 85f:31001

Ivanova, L. D. Fourier series in harmonic polynomials of two variables. (Russian) 85a:31001

Kuran, U. (with Schiff, J. L.) A uniqueness theorem for nonnegative superharmonic functions in planar domains. 85c:31001

Lewis, John L. (with Rossi, J. F.; Weitsman, Allen) On the growth of subharmonic functions along paths. 85f:31002

Luau, Wen Gui The stabilized algorithm of analytic continuation for a potential field. (Chinese. English summary) 85c:31002

Lyons, T. J. Finely harmonic functions need not be quasi-analytic. 85h:31001

Rossi, J. F. See Lewis, John L.; et al., 85f:31002

Schiff, J. L. See Kuran, U., 85c:31001

Sergienko, E. N. Growth of functions representable as the difference of subharmonic functions and admitting a special lower bound. (Russian) 85a:31003

Sodin, M. L. A remark on limit sets of subharmonic functions of natural order in a plane. (Russian) 85f:31003

Ueda, Hideharu On the growth of subharmonic functions in  $\{Re z > 0\}$ . 85b:31003

A subharmonic function related to theorems of Barry. 85f:31004

Vesentini, Edoardo Nonsubharmonicity of the Hausdorff distance. (Italian summary) 85h:31002

Walker, W. J. Boundary behaviour of level curves of harmonic functions. 85d:31002

Weitsman, Allen See Lewis, John L.; et al., 85f:31002

Yamashita, Shinji Le principe de Phragmén-Lindelöf pour les fonctions de classe PL. (English summary) [The Phragmén-Lindelöf principle for functions of class PL] 85f:31005

F. Riesz's decomposition of a subharmonic function, applied to BMOA. (Italian summary) 85g:31001

#### secondary classifications (31A05)

Aupetit, Bernard Some uses of subharmonicity in functional analysis. (See 85c:46001)

Clunie, J. (with Sheil-Small, T.) Harmonic univalent functions. 85i:30014

Easén, Matti A theorem on convex sequences. 85a:20016

Gardiner, Stephen J. Local and global majorization of subharmonic functions. 85c:31007

Korenblum, Boris (with Thomas, Edward) An inequality with applications in potential theory. 85d:26005

McConnell, Terry R. Area integrals and subharmonic functions. 85c:31008

Sheil-Small, T. See Clunie, J., 85i:30014

Thomas, Edward See Korenblum, Boris, 85d:26005

### 31A10 Integral representations

Chakrabarti, Aloknath See Nalin, V. N., 85a:31004

Clunie, J. (with Rippon, P. J.) On harmonic functions with integrable maximum modulus. 85b:31003

Nalin, V. N. (with Chakrabarti, Aloknath) Evaluation of certain improper integrals arising in potential problems. 85a:31004

Premalatha On subharmonic functions of potential type in  $R^2$ . (Serbo-Croatian summary) 85i:31001

Rippon, P. J. See Clunie, J., 85b:31003

#### secondary classifications (31A10)

Gardiner, Stephen J. Representation and growth of subharmonic functions in half-spaces. 85m:31003

### 31A15 Potentials and capacity, harmonic measure, extremal length [See also 30C85.]

Zoril, N. V. Generalization of the symmetric case of A. A. Gonchar's problem on capacities of condensers. (Russian) 85c:31001

#### secondary classifications (31A15)

Ancona, Alano Démonstration d'une conjecture sur la capacité et l'effilement. (English summary) [Proof of a conjecture about capacity and thinness] 85c:31006

Carleson, Lennart On  $H^\infty$  in multiply connected domains. 85g:30058

Ivanov, O. V. (with Suvorov, G. D.) ★ Полные решетки конформно-инвариантных компактификаций области. (Russian) [Complete lattices of conformally invariant compactifications of a domain] 85d:30041

Kirsch, S. Ein verallgemeinerter transfiniter Durchmesser im Zusammenhang mit einer quasikonformen Normalabbildung. [A generalized transfinite diameter in connection with a quasiconformal normal mapping] 85j:30050

Lageabschätzung für einen Kondensator minimaler Kapazität. (English and Russian summaries) [Locus estimate for a condenser of minimal capacity] 85m:30016

Lewis, John L. (with Rossi, J. F.; Weitsman, Allen) On the growth of subharmonic functions along paths. 85f:31002

Mityuk, I. P. Estimates of the interior radius [capacity] of some domain [condenser]. (Russian) 85i:30053

Øksendal, B. Projection estimates for harmonic measure. 85j:30052

Rossi, J. F. See Lewis, John L.; et al., 85f:31002

Suvorov, G. D. See Ivanov, O. V., 85d:30041

Weitsman, Allen See Lewis, John L.; et al., 85f:31002

### 31A20 Boundary behavior (theorems of Fatou type, etc.)

Berman, Robert D. Analogues of radial uniqueness theorems for subharmonic functions in the unit disk. 85d:31003

Heins, M. Vector-valued harmonic functions. 85k:31003

Nagel, Alexander (with Rudin, Walter; Shapiro, Joel H.) Tangential boundary behavior of harmonic extensions of  $L^p$  potentials. 85c:31002

Rudin, Walter See Nagel, Alexander; et al., 85c:31002

Shapiro, Joel H. See Nagel, Alexander; et al., 85c:31002

#### secondary classifications (31A20)

Belna, C. L. (with Cohn, William; Hansen, Lowell) Nonrectifiable level sets for universal covering maps. 85i:30011

Cohn, William See Belna, C. L.; et al., 85i:30011

Coller, M. G. (with Kelloggs, A.) Periodic Beurling distributions. 85f:46080

Hansen, Lowell See Belna, C. L.; et al., 85i:30011

Hwang, Jun Shung On Doob's conjecture about fine limit and Julia point. 85a:30050

Jerison, David S. (with Kenig, Carlos E.) Boundary value problems on Lipschitz domains. 85f:35057

Kelloggs, A. See Collier, M. G., 85f:46080

Kenig, Carlos E. See Jerison, David S., 85f:35057

Mizuta, Yoshihiro On the behavior of harmonic functions near a hyperplane. 85g:31003

On the behavior of potentials near a hyperplane. 85h:31007

Tamrasov, P. M. Contour-solid properties of holomorphic functions and mappings with bilogarithmically concave majorants. (Russian) 85h:30042

Wu, Jang Mei G. Subharmonic functions in  $C^{1+\alpha}$  domains. 85f:31010

### 31A25 Boundary value and inverse problems

Akhmedov, Z. A. A conditionally well-posed problem for a biharmonic equation in a rectangle. (Russian) (Not in MR)

Atakhodjaev, M. A. A problem of M. M. Lavrent'ev for the biharmonic equation in a rectangle. (Russian) 85f:31006

Ling, Chih Bing Potential related to a strip with a pair of  $V$  or  $U$  notches. 85c:31002

Mikhailov, S. E. An integral equation of certain boundary value problems for harmonic functions in plane multiply connected domains with an irregular boundary. (Russian) 85c:31003

Mikhalyuk, M. I. (with Parasyuk, E. M.) An existence theorem for the solution of an inverse problem of logarithmic potential for variable density. (Ukrainian. Russian summary) 85d:31004

Parasyuk, E. M. See Mikhalyuk, M. I., 85d:31004

Prilepko, A. I. Selected questions of the exterior inverse problem of potential theory. (Russian) 85j:31001

Prudnikov, A. P. See Vlasov, V. I., 85c:31004

Vlasov, V. I. (with Prudnikov, A. P.) Asymptotic behavior of the solutions of some boundary value problems for the Laplace equation in the case of deformation of the domain. (Russian) 85c:31004

#### secondary classifications (31A25)

Bosia, George Szebehely's inverse problem for finite symmetrical material concentrations. 85d:70006

Brodkoff, M. A. See Strakhov, V. N., 85h:86007

Chen, Jih Hsiang (with Johnson, L. W.; Riesz, R. D.) An algorithm for Gauss harmonic formulas. 85h:65061

Christiansen, Søren A comparison of various integral equations for treating the Dirichlet problem. (See 85c:65005)

Colli Fransone, P. (with Guerri, L.; Magenes, Enrico) Oblique double layer potentials for the direct and inverse problems of electrocardiology. 85j:92007

Guerri, L. See Colli Fransone, P.; et al., 85j:92007

Johnson, L. W. See Chen, Jih Hsiang; et al., 85h:65061

Magenes, Enrico See Colli Fransone, P.; et al., 85j:92007

Riesz, R. D. See Chen, Jih Hsiang; et al., 85h:65061

- Strakhov, V. N. (with Brodskii, M. A.) On the problem of uniqueness in plane inverse problems of gravimetry and magnetometry. (Russian) **85h:86007**
- Symon, George T. The use of Green's boundary formula in potential theory. **85f:65116**
- Zemite, A. A. Use of discretization of the condition for solvability of a problem for harmonic functions. (Russian) **85m:65126**

### 31A30 Biharmonic, polyharmonic functions and equations, Poisson's equation

- Barański, Feliks (with Musialek, Jan) On the Lauricella problem for the equation  $\Delta^2 u(X) = f(X, u(X))$  in the circle. **85d:31006**
- Cohen, Jonathan (with Gosselin, John) The Dirichlet problem for the biharmonic equation in a  $C^1$  domain in the plane. **85b:31004**
- Gorbachuk, V. I. The Fatou theorem on the boundary behavior of derivatives in a class of biharmonic functions. (Russian) **85e:31003**
- Gosselin, John. See Cohen, Jonathan, **85b:31004**
- Kovalev, V. F. (with Mel'nikenko, I. P.) Biharmonic algebras and the geometry of the domain of a boundary value problem. (Russian. English summary) **85c:31005**
- Mel'nikenko, I. P. See Kovalev, V. F., **85c:31005**
- Musialek, Jan. See Barański, Feliks, **85d:31006**

#### secondary classifications (31A30)

- Adzhubel, L. T. Construction of optimal regulators for the biharmonic equation. (Russian) **85i:49054**
- Akhmedov, Z. A. See Atakhodjaev, M. A., **85e:35123**
- Atakhodjaev, M. A. (with Akhmedov, Z. A.) A problem for the biharmonic equation in a rectangle. (Russian) **85c:31123**
- Costabel, Martin (with Stephan, E.; Wendland, W. L.) On boundary integral equations of the first kind for the bi-Laplacian in a polygonal plane domain. **85f:35074**
- Stephan, E. See Costabel, Martin; et al., **85f:35074**
- Wendland, W. L. See Costabel, Martin; et al., **85f:35074**
- Yu, De Hao Canonical integral equations of biharmonic elliptic boundary value problems. (Chinese summary) **85j:35059**

### 31A35 Connections with differential equations

- McCoy, Peter A. Characterization of solutions to the generalized Cauchy-Riemann system. **85c:31004**

#### secondary classifications (31A35)

- Aronsson, Gunnar On certain singular solutions of the partial differential equation  $u_{xx}^2 + 2u_{xy}u_{yy} + u_{yy}^2 = 0$ . **85m:35011**
- Cranston, M. Invariant  $\sigma$ -fields for a class of diffusions. **85d:60145**
- Firmani, Bruno Conditions for the regularity of the solution of the Dirichlet problem for a second-order hyperbolic equation. (Italian. English summary) **85b:35037**
- Gabr, M. K. A type of equipotential lines related to Joukowski's profile. **85f:78009**
- Ibragimov, A. I. (with Landis, E. M.) Trichotomy of solutions of the Neumann problem for the Laplace equation. (Russian) **85b:35032**
- Landis, E. M. See Ibragimov, A. I., **85b:35032**

### 31A99 None of the above, but in this section

- Dervis, A. O. (with Khavin, V. P.) Free interpolation and the Dirichlet problem. (Russian. English summary) **85j:31002**
- Khavin, V. P. See Dervis, A. O., **85j:31002**
- Nakai, Mitsuru (with Tada, Toshimasa) The distribution of Picard dimensions. **85c:31004**
- Ramsey, Thomas (with Weit, Yitzhak) Mean values and classes of harmonic functions. **85m:31001**
- Tada, Toshimasa. See Nakai, Mitsuru, **85c:31004**
- Weit, Yitzhak. See Ramsey, Thomas, **85m:31001**

#### secondary classifications (31A99)

- Kapoor, G. P. (with Nautiyal, A.) On the approximation of generalized axisymmetric potentials. (Serbo-Croatian summary) **85b:35017**
- Kuramochi, Zenjiro Applications of quasi-Dirichlet bounded harmonic functions. **85m:30030**
- Nautiyal, A. See Kapoor, G. P., **85b:35017**

### 31Bxx Higher-dimensional theory

#### 31B05 Harmonic, subharmonic, superharmonic functions

- Anandam, Victor On the integral representation of bi-subharmonic functions in  $\mathbb{R}^n$ . **85d:31006**
- Armitage, D. H. A note on hyperplane mean values of the modulus of a harmonic function. **85a:31005**
- (with Gardiner, Stephen J.) Some Phragmén-Lindelöf and harmonic majorization theorems for subharmonic functions. **85i:31002**
- Baba, Tateo Regular points for  $\alpha$ -harmonic functions. **85c:31006**
- Davis, Burgess (with Lewis, John L.) Paths for subharmonic functions. **85m:31002**
- Fridman, O. N. Lower bounds of functions subharmonic in  $\mathbb{R}^m$  or in an  $m$ -dimensional ball. (Ukrainian. Russian summary) **85d:31007**
- Gardiner, Stephen J. Local and global majorization of subharmonic functions. **85c:31007**
- See also Armitage, D. H., **85i:31002**
- Gauthier, P. M. Carleman approximation on unbounded sets by harmonic functions with Newtonian singularities. **85j:31003**
- Gleiser, E. V. Classes of  $\delta$ -subharmonic functions with separated masses. (Russian) **85k:31005**

- Gol'dberg, A. A. (with Zabolotskii, N. V.) Index of concentration of a subharmonic function of zero order. (Russian) **85a:31006**
- Kapoor, G. P. (with Nautiyal, A.) On the growth of harmonic functions in  $\mathbb{R}^3$ . **85j:31004**
- Kondratyuk, A. A. Infinite-order subharmonic functions with radial mass distribution. (Russian) (See **85k:35001**)
- Kuran, Ō. On positive superharmonic functions in  $\alpha$ -admissible domains. **85j:31005**
- Lewis, John L. See Davis, Burgess, **85m:31002**
- McConnell, Terry R. Area integrals and subharmonic functions. **85c:31008**
- Nautiyal, A. See Kapoor, G. P., **85j:31004**
- Ohtsuka, Makoto An example related to boundedness of subharmonic functions. **85c:31009**
- Rippon, P. J. Some remarks on harmonic and superharmonic functions. **85h:31002**
- Samotij, Krzysztof A representation theorem for harmonic functions of restricted growth in the ball in  $\mathbb{R}^n$ . (Russian summary) **85c:31010**
- Shaginyan, A. A. Tangential harmonic and gradient approximation. (Russian. Armenian summary) **85b:31005**
- A boundary singularity of functions that are harmonic in a ball. (Russian. Armenian summary) **85c:31005**
- Vesolovskaya, O. V. The growth of entire functions harmonic in  $\mathbb{R}^n$ . (Russian) **85e:31006**
- Wildenhain, Günther Eine Bemerkung zur gleichmäßigen Approximation durch Lösungen elliptischer Gleichungen. [A remark on uniform approximation by solutions of elliptic equations] **85c:31007**
- Wu, Jang Mei G. Minimum growth of harmonic functions and thinness of a set. **85g:31002**
- Zabolotskii, N. V. Some relations for Nevanlinna characteristics of  $\delta$ -subharmonic functions of order  $< 1$ . (Russian) **85h:31003**
- See also Gol'dberg, A. A., **85a:31006**

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- Ahern, Patrick R. (with Johnson, Kenneth D.) Differentiability criteria and harmonic functions on  $B^n$ . **85f:43016**
- Ding, Xia Xi Higher-dimensional singular integrals and harmonic functions. (Chinese. English summary) **85k:42046**
- Dzhvarshelashvili, I. A. Boundary properties of harmonic and subharmonic functions of several variables. (Russian. English and Georgian summaries) **85a:31007**
- Fichera, Gaetano Boundary problems for pluriharmonic functions. (Italian) **85c:32030**
- Fukushima, Yukio On the relation between pluriharmonic functions and holomorphic functions. **85f:32026**
- Gigante, Giuliana Remarks on subharmonic functions on Riemannian manifolds. (Italian summary) **85j:53043**
- Goldstein, Myron Harmonic approximation. (See **85m:41002**)
- Hueber, Hermann The Poisson space of the Korányi ball. **85j:32053**
- Johnson, Kenneth D. See Ahern, Patrick R., **85f:43016**
- Luecking, Daniel H. Equivalent norms on  $L^p$  spaces of harmonic functions. **85k:46023**
- Lyons, T. J. (with McKean, H. P.) Winding of the plane Brownian motion. **85k:60114b**
- Madych, W. R. (with Nelson, S. A.) Sets of uniqueness for solutions of the reduced wave equation. **85a:35024**
- McKean, H. P. (with Sullivan, Dennis P.) Brownian motion and harmonic functions on the class surface of the thrice punctured sphere. **85k:60114a**
- See also Lyons, T. J., **85k:60114b**
- Mochizuki, Nesomu A class of subharmonic functions and integral inequalities. **85b:31008**
- Nelson, S. A. See Madych, W. R., **85a:35024**
- Ribbentaus, Juhani On the extension of separately hyperharmonic functions and  $H^p$ -functions. **85j:32023**
- Ryabogin, A. K. Integral inequalities for conjugate harmonic functions in half space. (Russian) **85j:26028**
- Shaginyan, A. A. Approximation of continuous vector fields by potential fields. (Russian. Armenian summary) **85b:41049**
- Stoll, Manfred On the rate of growth of the means  $M_p$  of holomorphic and pluriharmonic functions on the ball. **85c:32006**
- Sullivan, Dennis P. See McKean, H. P., **85k:60114a**

#### 31B10 Integral representations

- Gardiner, Stephen J. Representation and growth of subharmonic functions in half-spaces. **85m:31003**

#### secondary classifications (31B10)

- Chen, Ying Tian (with Wang, Qin) On the significance of the axial Newtonian gravitational force of the finite cylinder. **85h:86006**
- Gleiser, E. V. Classes of  $\delta$ -subharmonic functions with separated masses. (Russian) **85k:31005**
- Wang, Qin. See Chen, Ying Tian, **85h:86006**

#### 31B15 Potentials and capacities, extremal length

- Adams, David R. (with Hedberg, L. I.) Inclusion relations among fine topologies in nonlinear potential theory. **85c:31011**
- Ancona, Alano Démonstration d'une conjecture sur la capacité et l'effilement. (English summary) [Proof of a conjecture about capacity and thinness] **85c:31006**
- Arnold, V. I. The Newton potential of hyperbolic layers. (Russian. English and Georgian summaries) **85j:31006**
- Bauer, Helmut Sur les mesures de Fulkers dans la théorie de l'équation de la chaleur. (English summary) [On Fulkers measures in the heat equation theory] **85b:31006**
- Donchev, T. Symmetrization in  $\mathbb{R}^n$  with respect to hyperplanes with the dimensions  $\leq (1 \leq s \leq n-2)$ . (Bulgarian. English and Russian summaries) **85k:31006**
- Hedberg, L. I. See Adams, David R., **85c:31011**
- Křivánková, Dagmar Remark on Ugaberi's maximum principle. (Russian and Czech summaries) **85i:31003**

- Misuta, Yoshihiro On semifine limits of potentials. 85i:31004  
 Vuorinen, M. On functions with a finite or locally bounded Dirichlet integral. 85h:31004  
 Zoril, N. V. Estimates of capacities and energies in the reconstruction of spatial condensers. (Russian) 85e:31009

## secondary classifications (31B15)

- Caraman, Petru About the equality between the  $p$ -module and the  $p$ -capacity in  $\mathbb{R}^n$ . 85k:30025  
 Herbst, E. Ein Kapazitätsbegriff für gewichtete Sobolevräume. (English and Russian summaries) [A capacity concept for weighted Sobolev spaces] 85e:46006  
 Lindqvist, Peter A remark on the conformal capacity of Grötzsch's condenser in space. 85k:30033  
 Mattila, Pertti An integral inequality for capacities. 85f:31016  
 Hausdorff dimension and capacities of intersections of sets in  $n$ -space. 85g:28007  
 Michael, J. H. Riesz capacity and the approximation of Sobolev functions by smooth functions. (See 85g:00024)  
 Skripnik, I. V. Pointwise estimates of certain capacitive potentials. (Russian) 85m:35026  
 Wohlfahrt, Alfred Raumwinkelkonforme Abbildungen. (English summary) [Mappings conformal with respect to solid angles] 85i:30012

## 31B20 Boundary value and inverse problems

- Abdulkarimov, A. Determination of a harmonic function in a ball and outside a ball from its values on rays. (Russian) 85h:31005  
 Fabrikant, V. I. (with Sankar, T. S.; Swamy, M. N. S.) On the generalized potential problem for a surface of revolution. 85d:31008  
 Fys, M. M. Approximate solution of an inverse problem of potential theory for an ellipsoid. (Russian) (See 85k:35001)  
 Kapanadze, D. V. An inverse problem of potential theory. (Russian. English and Georgian summaries) 85d:31009  
 On a problem of G. Ager. (Russian) 85m:31004  
 Mar'ya, V. G. The modulus of continuity of a harmonic function at a boundary point. (Russian. English summary) 85i:31005  
 Nikolaev, A. G. See Protasenko, V. S., 85k:31007  
 Okamoto, Hisashi A generalization of Liapunov's theorem concerning a mass of fluid with self-gravitation. 85h:31006  
 Protasenko, V. S. (with Nikolaev, A. G.) Reduction of a mixed problem of potential theory. (Russian) 85k:31007  
 Sankar, T. S. See Fabrikant, V. I.; et al., 85d:31008  
 Swamy, M. N. S. See Fabrikant, V. I.; et al., 85d:31008  
 Wegmann, R. Local existence and uniqueness theorems for a free boundary problem. 85m:31005

## secondary classifications (31B20)

- Albinus, Günter Multiple layer potentials for the quadrant and their application to the Dirichlet problem in plane domains with a piecewise smooth boundary. 85f:35073  
 Brodskii, M. A. Uniqueness in the inverse problem of gravimetry for homogeneous polyhedra. (Russian) 85h:36005  
 Cuppen, J. J. M. Calculating the isochrones of ventricular depolarization. 85d:92007  
 Erofenko, V. T. Addition theorems connected with toroidal, cylindrical and spherical harmonic functions. (Russian) 85c:33014  
 Fichera, Gaetano Boundary problems for pluriharmonic functions. (Italian) 85c:32030  
 Li, Zhi Chan The uniqueness of solution of the stochastic Dirichlet problem. (Chinese) 85j:60142  
 Netuka, Ivan (with Veselý, Jiří) Integral equations in potential theory. (Czech) 85b:31001  
 Veselý, Jiří See Netuka, Ivan, 85b:31001

## 31B25 Boundary behavior

- Annin, B. D. A problem with an unknown boundary for the Poisson equation in space. (Russian) (See 85d:35006)  
 Davvarshelidze, I. A. Boundary properties of harmonic and subharmonic functions of several variables. (Russian. English and Georgian summaries) 85a:31007  
 Gardiner, Stephen J. Half-spherical means and boundary behaviour of subharmonic functions in half-spaces. 85f:31007  
 Hatano, Kaoru Existence and Hölder continuity of derivatives of single layer  $\Phi$ -potentials. 85f:31006  
 Korányi, Adam (with Taylor, John Christopher) Fine convergence and parabolic convergence for the Helmholtz equation and the heat equation. 85a:31008  
 Misuta, Yoshihiro On the behavior of harmonic functions near a hyperplane. 85g:31003  
 On the behavior of potentials near a hyperplane. 85h:31007  
 On the boundary limits of harmonic functions with gradient in  $L^p$ . (French summary) 85f:31009  
 Rippon, P. J. Ambiguous points of functions in the unit ball of Euclidean space. 85c:31010  
 Taylor, John Christopher See Korányi, Adam, 85a:31008  
 Wu, Jang Mei G. Subharmonic functions in  $C^{1+\alpha}$  domains. 85f:31010

## secondary classifications (31B25)

- Fabes, Eugene B. (with Kenig, Carlos E.; Jerison, David S.) Boundary behavior of solutions to degenerate elliptic equations. 85m:35028  
 Jerison, David S. See Fabes, Eugene B.; et al., 85m:35028  
 Kenig, Carlos E. See Fabes, Eugene B.; et al., 85m:35028  
 Mair, B. A. Fine and parabolic limits for solutions of second-order linear parabolic equations on an infinite slab. 85f:35102  
 Misuta, Yoshihiro On semifine limits of potentials. 85i:31004

- Nagel, Alexander (with Rudin, Walter; Shapiro, Joel H.) Tangential boundary behavior of harmonic extensions of  $L^p$  potentials. 85e:31002  
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 Novrusov, A. A. The Dirichlet problem for second-order degenerate equations with discontinuous coefficients. (Russian) 85i:35046  
 Ricci, F. (with Taibleson, Mitchell) Boundary values of harmonic functions in mixed norm spaces and their atomic structure. 85m:30025  
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 Rudin, Walter See Nagel, Alexander; et al., 85e:31002  
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 Vinokurov, V. A. (with Novak, V. I.) Estimate of the dimensions of a gravitating mass by an external field. (Russian) 85k:86004  
 Wu, Jang Mei G. Minimum growth of harmonic functions and thinness of a set. 85g:31002

## 31B30 Biharmonic and polyharmonic equations and functions

- Amaranath, T. See Nigam, S. D., 85d:31011  
 Dobrotvor, I. G. Oscillatory properties of solutions of equations with a polyharmonic operator in the space  $E^n$ . (Russian) 85f:31011  
 González, Luis A. (with Wildenhain, Günther) On the radial limit of polyharmonic functions in  $\mathbb{R}^n$ . (Spanish. English summary) 85b:31007  
 Kesavan, S. A potential method for the biharmonic equation. 85d:31010  
 Misuta, Yoshihiro On the boundary limits of polyharmonic functions in a half space. 85f:31012  
 Nigam, S. D. (with Amaranath, T.) A note on the paper: "On a differential equation of Bergman and Schiffer" [J. Math. Phys. Sci. 14 (1980), no. 3, 225-238; MR 82m:31010] by M. A. Jawson and A. Shidfar. 85d:31011  
 Pechen, B. K. On the general theory of almost everywhere polyharmonic functions. (Russian) 85d:31012  
 Shidfar, Abdullah Transformation of a biharmonic function from  $r^2$ -form to  $z$ -form and vice versa in representation of a biharmonic function in terms of two harmonic functions. 85d:31013  
 Shipka, I. G. Integral representation of metaharmonic functions in domains with cracks. (Ukrainian. Russian summary) 85d:31014  
 Tavkhelidze, I. N. Estimates of the derivatives of the solutions of a polyharmonic equation in a neighborhood of nonregular points of the boundary and at infinity. (Russian. English and Georgian summaries) 85f:31013  
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## secondary classifications (31B30)

- Caddeo, R. A decomposition theorem for radial polyharmonic functions on a Riemann manifold. (Italian. English summary) 85e:33020a  
 D'Ambra, G. (with Matzeu, P.) Uniqueness of the Almansi expansion in manifolds with biharmonic distance functions. (Italian. English summary) 85e:33020b  
 Filat, Maria The third boundary problem for the equation  $\Delta^2 u(x) = f(x)$  in the octant. 85k:35069  
 Fokht, A. S. Estimate of the derivative of a harmonic function and weighted imbedding theorems connected with it. (Russian) 85h:46052  
 Gaveau, Bernard Valeurs frontières des fonctions harmoniques ou holomorphes et de leurs dérivées. II. Cas de la boule. [Boundary values of harmonic or holomorphic functions and their derivatives. II. The case of the ball] 85j:32006  
 Grinberg, G. A. On a possible method of approach to the solution of the biharmonic equation  $\Delta^2 w = \Phi$  under different boundary conditions at the boundary of a plane or spatial domain. (Russian) 85i:73006a  
 Correction: "On a possible method of approach to the solution of the biharmonic equation  $\Delta^2 w = \Phi$  under different boundary conditions at the boundary of a plane or spatial domain". (Russian) 85i:73006b  
 Kondrat'ev, V. A. (with Oleinik, O. A.) Estimates for solutions of the Dirichlet problem for the biharmonic equation in a neighbourhood of an irregular boundary point and in a neighbourhood of infinity. Saint-Venant's principle. 85c:35031  
 Matzeu, P. See D'Ambra, G., 85e:33020b  
 Oleinik, O. A. See Kondrat'ev, V. A., 85c:35031

## 31B35 Connections with differential equations

- Negrini, Paolo (with Scornazzani, Vittorio) Superharmonic functions and regularity of boundary points for a class of elliptic-parabolic partial differential operators. (Italian summary) 85k:31008  
 Scornazzani, Vittorio See Negrini, Paolo, 85k:31008

## secondary classifications (31B35)

- Clément, Ph. On continua of positive and superharmonic solutions to semilinear elliptic eigenvalue problems. (See 85h:35004)  
 Dahlberg, Björn E. J. (with Jerison, David S.; Kenig, Carlos E.) Area integral estimates for elliptic differential operators with nonsmooth coefficients. 85h:35021  
 Fabes, Eugene B. (with Jerison, David S.; Kenig, Carlos E.) Necessary and sufficient conditions for absolute continuity of elliptic-harmonic measure. 85h:35069  
 Hedberg, L. I. On the Dirichlet problem for higher-order equations. 85h:35073  
 Jerison, David S. See Dahlberg, Björn E. J.; et al., 85h:35021 and Fabes, Eugene B.; et al., 85h:35069  
 Kenig, Carlos E. See Dahlberg, Björn E. J.; et al., 85h:35021 and Fabes, Eugene B.; et al., 85h:35069  
 Landis, E. M. The structure of nonessential sets with respect to the Dirichlet problem for second-order elliptic operators with discontinuous coefficients. (Russian) 85h:35068



- Novruzov, A. A.** An approach to the investigation of qualitative properties of solutions of second-order elliptic equations not in divergence form. (Russian) **85i:35047**
- Wildenhain, Günther** Eine Bemerkung zur gleichmäßigen Approximation durch Lösungen elliptischer Gleichungen. [A remark on uniform approximation by solutions of elliptic equations] **85e:31007**

31B99 None of the above, but in this section

secondary classifications (31B99)

- Fukushima, Masatoshi** (with Okada, Masami) On conformal martingale diffusions and pluripolar sets. **85j:32029**
- Millar, Robert F.** On the completeness of the Papkovitch potentials. **85e:73009**
- Okada, Masami** See Fukushima, Masatoshi, **85j:32029**

### 31Cxx Other generalizations

31C05 Harmonic, subharmonic, superharmonic functions

- Djrbashian, A. E.** Integral representations and continuous projectors in some spaces of harmonic functions. (Russian) **85g:31004**
- Mochizuki, Nosomu** A class of subharmonic functions and integral inequalities. **85b:31008**
- Vernier Piro, Stella** Harmonic functions on Lipschitz domains with VMO data. (Italian summary) **85f:31014**

secondary classifications (31C05)

- Baba, Taseo** Regular points for  $\alpha$ -harmonic functions. **85e:31006**
- Daşgınlı, O. P.** Some integral inequalities. (Russian) **85d:30003**
- Ehrenpreis, Leon** Conformal geometry. **85f:53017**
- Korányi, Adam** Generalized notions of harmonic functions: symmetric spaces. (Italian summary) **85d:43009**
- Raugi, A.** Une démonstration d'un théorème de Choquet-Deny par les martingales. (English summary) [A martingale proof of a Choquet-Deny theorem] **85h:60110**

31C10 Pluriharmonic and plurisubharmonic functions [See also 32F05.]

- Sneider, Maria Adelaide** The pluriharmonic problem in a spherical domain of  $C^n$  for  $n \geq 3$ . (Italian. English summary) **85k:31009**

secondary classifications (31C10)

- Alexander, H.** Capacities in  $C^n$ . (See **85h:46003**)
- Fornæss, J. E.** Plurisubharmonic functions on smooth domains. **85e:32031**
- Ishankulov, T. P.** A problem of analytic continuation for a pluriharmonic function. (Russian) **85f:32027**
- Molzon, R. E.** Potential theory on complex projective space: application to characterization of pluripolar sets and growth of analytic varieties. **85d:32052**
- Riihentaus, Juhani** On the extension of holomorphic functions with growth conditions. **85b:32021**
- Siciak, Josef** On the equivalence between locally polar and globally polar sets in  $C^n$ . **85h:32024**

31C12 Potential theory on Riemannian manifolds [See also 53C20; for Hodge theory, see 58A14.]

- Strichartz, Robert S.** Mean value properties of the Laplacian via spectral theory. **85h:31008**

secondary classifications (31C12)

- Arnol'd, V. I.** Some remarks on elliptic coordinates. (Russian. English summary) **85m:58027**
- Choi, Hyeon In** Asymptotic Dirichlet problems for harmonic functions on Riemannian manifolds. **85b:53040**
- Glaner, Moses** (with Nakai, Mitsuru) Surjective extension of the reduction operator. **85d:30066**
- Nakai, Mitsuru** See Glaner, Moses, **85d:30066**

31C15 Potentials and capacities

- Bănuţescu, Martha** Potentials on locally compact nonabelian groups. **85j:31007**
- Potentials on locally compact nonabelian groups. **85j:31008**
- Boboc, N.** (with Bucur, Gh.) Perturbations in excessive structures. **85i:31006**
- Bucur, Gh.** See Boboc, N., **85i:31006**
- Hedberg, L. I.** (with Wolff, Thomas H.) Thin sets in nonlinear potential theory. **85f:31015**
- Jannsen, K.** Standard  $H$ -cones and balayage spaces. **85i:31007**
- Maderma, Carla** On level sets of Poisson integrals in disks and sectors. (Italian summary) **85h:31009**
- Mattila, Pertti** An integral inequality for capacities. **85f:31016**
- Mar'ya, V. G.** (with Pinnasarov, S. P.) Estimates for capacities and traces of potentials. **85f:31017**
- Ninomiya, Nobuyuki** On the balayage constant for logarithmic potentials. **85f:31018**
- Pinnasarov, S. P.** See Mar'ya, V. G., **85f:31017**
- Watanabe, Hisako** On the existence of condenser-type measures with respect to function-kernels. **85d:31015**
- Wolff, Thomas H.** See Hedberg, L. I., **85f:31015**
- Yamamoto, Hiromichi** Weak boundary components in  $R^N$ . **85a:31009**

secondary classifications (31C15)

- Alexander, H.** (with Taylor, B. A.) Comparison of two capacities in  $C^n$ . **85k:32034**
- Barthélemy, Louise** See Pierre, M., **85k:49025**

**Dehen, Danièle** See Mastrangelo, Michèle, **85f:60111**

**Élie, Laure** Comportement asymptotique du noyau potentiel sur les groupes de Lie. [Asymptotic behavior of the potential kernel on Lie groups] **85b:60005**

**Fukushima, Masatoshi** Capacitary maximal inequalities and an ergodic theorem. **85h:60108**

**Kahane, J.-P.** Distributions des processus de Lévy arrêtés et applications à la théorie du potentiel. (English summary) [Distributions of stopped Lévy processes and application to potential theory] **85a:60075**

**Kalina, Jerzy** A variational characterization of condenser capacities in  $C^n$  within a class of plurisubharmonic functions. **85i:32026a**

Biholomorphic invariance of capacity and the capacity of an annulus. **85i:32026b**

**Kolerud, Torbjörn** Condenser capacities and removable sets in  $W^{1,p}$ . **85h:46053**

**Li, Zhi Chan** A generalization of the equilibrium problem of potential theory. (Chinese) (Not in MR)

**Lieb, Elliott H.** An  $L^p$  bound for the Riesz and Bessel potentials of orthonormal functions. **85b:46041**

**Mastrangelo, Michèle** (with Dehen, Danièle) Différentiabilité fine et capacités. (English summary) [Fine differentiability and capacities] **85f:60111**

**Pierre, M.** (with Barthélemy, Louise) Une réflexion sur la notion de capacité appliquée aux inéquations variationnelles. [A reflection on the notion of capacity applied to variational inequalities] **85k:49025**

**Taylor, B. A.** See Alexander, H., **85k:32034**

**Watanabe, Hisako** On balayage on closed sets. **85e:31011**

31C25 Dirichlet spaces

- Bouleau, Nicolas** Désintégration des mesures d'énergie dans les espaces de Dirichlet et propriété de densité des temps d'occupation. (English summary) [Splitting of energy measures in Dirichlet spaces and the occupation density property] **85k:31010**
- Röckner, Michael** Selfadjoint harmonic spaces and Dirichlet forms. **85j:31009**

secondary classifications (31C25)

- Fukushima, Masatoshi** A note on irreducibility and ergodicity of symmetric Markov processes. **85g:60078**
- Ōshima, Yōichi** Potential of recurrent symmetric Markov processes and its associated Dirichlet spaces. **85k:60107**

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- Ben Saad, Hédi** Exemples de noyaux admettant des résolvantes. [Examples of kernels admitting resolvents] **85a:31010**
- Cornes, Florin Ovidiu** On the Riesz decomposition of bi-excessive measures on locally compact groups. **85k:31011**
- Itô, Masayuki** Les noyaux de convolution de type logarithmique. (English summary) [Convolution kernels of logarithmic type] **85f:31019**
- Kráľ, Josef** A note on continuity principle in potential theory. **85k:31013**
- Negrini, Paolo** Regular points of cylindrical open subsets in a  $\beta$ -harmonic space. (Italian. English summary) **85d:31016**
- Susuki, Noriaki** Invariant measures for uniformly recurrent diffusion kernels. **85h:31010**
- Wittmann, R.** A general continuity principle. **85k:31012**

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- Bouleau, Nicolas** (with Hirsch, Francis) Générateur étendu et subordination au sens de Bochner. (English summary) [Extended generator and subordination in Bochner's sense] **85a:60074**
- Fabes, Eugene B.** (with Salsa, Sandro) Estimates of caloric measure and the initial-Dirichlet problem for the heat equation in Lipschitz cylinders. **85e:35034**
- Hirsch, Francis** See Bouleau, Nicolas, **85a:60074**
- Kesel'man, D. G.** The Shilov boundary in a Choquet simplex. (Russian) **85i:46017**
- Matsuoka, Cho-ichiro** Comparison of measures on the maximal ideal space of  $H^\infty(W)$  with applications to the Dirichlet problem. **85e:46022**
- Øksendal, B.** Finely harmonic morphisms, Brownian path preserving functions and conformal martingales. **85f:60118**
- Salsa, Sandro** See Fabes, Eugene B., **85e:35034**
- Vesentini, Edoardo** Carathéodory distances and Banach algebras. **85h:32041**

### 31D05 Axiomatic potential theory

- Arsove, Maynard** (with Leutwiler, Heins) A unified theory of harmonic measures and capacity potentials. **85m:31006**
- (with Leutwiler, Heins) Characterization of quasi-units in terms of equilibrium potentials. **85m:31007**
- Barth, Thomas** Das maßtheoretische Minimumprinzip und seine Anwendung in der Potentialtheorie. [The measure-theoretic minimum principle and its application in potential theory] **85h:31011**
- Blidtnér, J.** (with Hansen, Wolfhard) The weak Dirichlet problem. **85h:31012**
- Boukricha, Abderrahman** Stabilité des propriétés de convergence par perturbation des espaces harmoniques. [Stability of convergence properties under perturbation of harmonic spaces] **85f:31020**
- Bucur, Gh.** (with Hansen, Wolfhard) Balayage, quasibalayage, and fine decomposition properties in standard  $H$ -cones of functions. **85j:31010**
- Cornes, Aurel** Geordnete konvexe Kegel in der Potentialtheorie. [Ordered convex cones in potential theory] **85m:31008**
- Feyel, Denis** Sur la théorie fine du potentiel. (English summary) [On fine potential theory] **85d:31017**
- Hansen, Wolfhard** Convergence of balayage measures. **85e:31012**
- See also Blidtnér, J., **85h:31012** and Bucur, Gh., **85j:31010**
- Ikegami, Teruo** On the simplicial cone of superharmonic functions in a resolutive compactification of a harmonic scale. **85e:31013**
- Leutwiler, Heins** See Arsove, Maynard, **85m:31006** and **85m:31007**

- Papa, Eugen Natural localisation of a standard  $H$ -cone. 85i:31008  
 Morphisms of  $H$ -cones. 85i:31014  
 Localization and product of  $H$ -cones. 85i:31021  
 Schirmmeyer, Ursula Continuous measure representations on harmonic spaces. 85a:31011  
 Continuity properties of the carrier map. 85f:31023  
 Thyagarajan, Rajawari On flux in a harmonic space. 85d:31018  
 Watanabe, Hisako On balayage on closed sets. 85i:31011

## secondary classifications (31D05)

- Negrini, Paolo Regular points of cylindrical open subsets in a  $\beta$ -harmonic space. (Italian. English summary) 85d:31018  
 (with Scornazzani, Vittorio) Superharmonic functions and regularity of boundary points for a class of elliptic-parabolic partial differential operators. (Italian summary) 85i:31008  
 Rückner, Michael Markov property of generalized fields and axiomatic potential theory. 85h:60111  
 Selfadjoint harmonic spaces and Dirichlet forms. 85j:31009  
 Scornazzani, Vittorio See Negrini, Paolo, 85i:31008  
 Stolica, Lucetia On sub-Markov resolvents. The restriction to an open set and the Dirichlet problem. 85m:60131

### 32-XX SEVERAL COMPLEX VARIABLES AND ANALYTIC SPACES (For infinite-dimensional holomorphy, see also 46G20, 58B12.)

- Cao, Hual Dong See Xu, Sen Lin; et al., (Not in MR)  
 Wang, Ze Ke See Xu, Sen Lin; et al., (Not in MR)  
 Xu, Sen Lin (with Wang, Ze Ke; Cao, Hual Dong) Isolated points of algebraic varieties. (Chinese) (Not in MR)

## 32-01 Elementary exposition; textbooks

- (Barthel, Gottfried) See Kaup, Ludger, 85k:32001  
 (Bridgland, Michael) See Kaup, Ludger, 85k:32001  
 Kaup, Burchard See Kaup, Ludger, 85k:32001  
 Kaup, Ludger (with Kaup, Burchard) ★ Holomorphic functions of several variables. 85k:32001  
 Malgrange, B. ★ Lectures on the theory of functions of several complex variables. 85c:32001  
 (Narasimhan, Raghavan) See Malgrange, B., 85c:32001

## 32-02 Advanced exposition (research surveys, monographs, etc.)

- (Dolbeault, Pierre) See Problems: Analysis on complex manifolds, (85d:32001)  
 (Kiselman, Christ O.) See Problems: Theory of functions of several complex variables, (Not in MR)  
 Vladimirov, V. S. Functions of several complex variables in mathematical physics. (Russian) 85f:32001  
 (Walczak, Paweł) See Problems: Analysis on complex manifolds, (85d:32001)  
 Problems:  
 Analysis on complex manifolds Problems in analysis on complex manifolds. (See 85d:32001)  
 Infinite-dimensional complex analysis Problems in the theory of functions of several complex variables and in infinite-dimensional complex analysis. (See 85d:32001)  
 Theory of functions of several complex variables Problems in the theory of functions of several complex variables and in infinite-dimensional complex analysis. (See 85d:32001)

## secondary classifications (32-02)

- Beals, Michael (with Fefferman, Charles; Grossman, Robert) Strictly pseudoconvex domains in  $\mathbb{C}^n$ . 85a:32025  
 Fefferman, Charles See Beals, Michael; et al., 85a:32025  
 Grossman, Robert See Beals, Michael; et al., 85a:32025  
 (Khavin, V. P.) See Problems: Linear and complex analysis, 85k:46001  
 (Khrushchëv, S. V.) See Problems: Linear and complex analysis, 85k:46001  
 Kohn, J. J. A survey of the  $\bar{\partial}$ -Neumann problem. 85e:32023  
 Nakamura, Iku VII<sub>0</sub> surfaces and a duality of cusp singularities. 85f:32049  
 (Nikol'skii, N. K.) See Problems: Linear and complex analysis, 85k:46001  
 Ohsawa, Takeo Cohomology vanishing theorems on weakly 1-complete manifolds. 85f:32063  
 Pfug, Peter Various applications of the existence of well growing holomorphic functions. 85h:32018  
 Ramadanov, I. P. Some applications of the Bergman kernel to geometrical theory of functions. 85h:32040  
 Problems:  
 Linear and complex analysis ★ Linear and complex analysis problem book. 85k:46001

## 32-03 Historical (must also be assigned at least one classification number from Section 01)

## secondary classifications (32-03)

- (Cartan, Henri) See Oka, Kiyoshi, 85i:01037  
 Dimiev, S. G. The Levi problem in complex analysis. On the occasion of the 100th anniversary of the birth of E. E. Levi. (Bulgarian) 85h:01022  
 Fichera, Gaetano The contributions of Francesco Severi and Guido Fubini to the theory of functions of several complex variables. (Italian) 85h:01027

- Klingen, H. Das Werk C. L. Siegels in der Funktionentheorie. [C. L. Siegel's work in complex analysis] 85a:01048  
 Kobayashi, Shoshichi The mathematical work of Y. Matsushima and its development. 85h:01047  
 (Levi, E. E.) See Dimiev, S. G., 85h:01022  
 (Matsushima, Yosô) See Kobayashi, Shoshichi, 85h:01047  
 (Narasimhan, Raghavan) See Oka, Kiyoshi, 85i:01037  
 Oka, Kiyoshi ★ Collected papers. 85i:01037  
 (Remmert, R.) See Oka, Kiyoshi, 85i:01037  
 (Siegel, Carl Ludwig) See Klingen, H., 85a:01048  
 Anniversary:  
 Birth of Levi, E. E. See Dimiev, S. G., 85h:01022

## 32-06 Proceedings, conferences, etc.

- (Amar, Éric) See Complex analysis, 85i:32002  
 (Dolbeault, Pierre) See Seminar: Lelong-Dolbeault-Skoda, analysis, 85k:32003  
 (Gay, Roger) See Complex analysis, 85i:32002  
 (Lawrynówics, Julian) See Analytic functions, 85k:32001  
 (Lelong, Pierre) See Seminar: Lelong-Dolbeault-Skoda, analysis, 85k:32003  
 (Nguyen Thanh Van) See Complex analysis, 85i:32002  
 (Siu, Yum Tong) See Complex analysis of several variables, 85a:32001  
 (Skoda, H.) See Seminar: Lelong-Dolbeault-Skoda, analysis, 85k:32003  
 Algebraic analysis ★ Algebraic analysis. 85k:32002  
 Analyse complexe ★ Analyse complexe. (French) [Complex analysis] 85i:32002  
 Analyse et topologie sur les espaces singuliers ★ Analyse et topologie sur les espaces singuliers. I. (French) [Analysis and topology on singular spaces. I.] 85i:32001a  
 Analysis and topology on singular spaces ★ Analyse et topologie sur les espaces singuliers. I. (French) [Analysis and topology on singular spaces. I.] 85i:32001a  
 Analytic functions ★ Analytic functions, Biaśejewko 1982. 85d:32001  
 Astérisque ★ Analyse et topologie sur les espaces singuliers. I. (French) [Analysis and topology on singular spaces. I.] 85i:32001a  
 Biaśejewko ★ Analytic functions, Biaśejewko 1982. 85d:32001  
 Colloquium:  
 Analysis and topology on singular spaces ★ Analyse et topologie sur les espaces singuliers. I. (French) [Analysis and topology on singular spaces. I.] 85i:32001a  
 Complex analysis ★ Analyse complexe. (French) [Complex analysis] 85i:32002  
 Complex analysis of several variables ★ Complex analysis of several variables. 85a:32001  
 Conference:  
 Analytic functions ★ Analytic functions, Biaśejewko 1982. 85d:32001  
 Complex analysis ★ Journées complexes, Nancy 82. (French) [Conference on complex analysis, Nancy 82] 85d:32002  
 Luminy ★ Analyse et topologie sur les espaces singuliers. I. (French) [Analysis and topology on singular spaces. I.] 85i:32001a  
 Madison, Wis. ★ Complex analysis of several variables. 85a:32001  
 Nancy ★ Journées complexes, Nancy 82. (French) [Conference on complex analysis, Nancy 82] 85d:32002  
 Proceedings of Symposia in Pure Mathematics ★ Complex analysis of several variables. 85a:32001  
 Seminar:  
 Lelong-Dolbeault-Skoda, analysis ★ Séminaire d'analyse P. Lelong-P. Dolbeault-H. Skoda. Années 1981/1983. [P. Lelong-P. Dolbeault-H. Skoda analysis seminar. 1981/1983] 85k:32003  
 Symposium:  
 Algebraic analysis ★ Algebraic analysis. 85k:32002  
 Several complex variables ★ Complex analysis of several variables. 85a:32001  
 Toulouse ★ Analyse complexe. (French) [Complex analysis] 85i:32002

## secondary classifications (32-06)

- (Andreian Casacu, Cabiria) See Seminar: Romanian-Finnish, complex analysis, 85h:00013b  
 (Boboc, N.) See Seminar: Romanian-Finnish, complex analysis, 85h:00013b  
 (Greenleaf, F. P.) See Proceedings: Conference on Banach algebras and several complex variables, 85h:46003  
 (Gulick, D.) See Proceedings: Conference on Banach algebras and several complex variables, 85h:46003  
 (Jurcescu, M.) See Seminar: Romanian-Finnish, complex analysis, 85h:00013b  
 (Lawrynówics, Julian) See Complex analysis, 85g:30001  
 (Siciak, Józef) See Complex analysis, 85g:30001  
 (Suciu, I.) See Seminar: Romanian-Finnish, complex analysis, 85h:00013b  
 Algebraic groups and related topics ★ Algebraic groups and related topics. (Japanese) 85h:14001  
 Bologna ★ Seminario di variabili complesse, 1981. (Italian) [Seminar on complex variables, 1981] 85g:14004  
 Bucharest ★ Complex analysis—fifth Romanian-Finnish seminar. Part 2. 85h:00013b  
 Complex analysis ★ Complex analysis. 85g:30001  
 Conference:  
 Banach algebras and several complex variables ★ Proceedings of the conference on Banach algebras and several complex variables. 85h:46003  
 New Haven, Conn. ★ Proceedings of the conference on Banach algebras and several complex variables. 85h:46003  
 Open problems Open problems. 85b:14001  
 Prehomogeneous vector spaces and related topics ★ Prehomogeneous vector spaces and related topics. (Japanese) 85g:11008  
 Proceedings:  
 Conference on Banach algebras and several complex variables ★ Proceedings of the conference on Banach algebras and several complex variables. 85h:46003  
 Recent results on singularities of varieties ★ Recent results on singularities of varieties. 85m:14002

## Seminar:

Complex analysis ★ Complex analysis. 85g:30001

Complex variables ★ Seminario di variabili complesse, 1981. (Italian) [Seminar on complex variables, 1981] 85g:14004

Geometry ★ Seminari di geometria, 1982-1983. (Italian) [Geometry seminars, 1982-1983] 85h:14002

Romanian-Finnish, complex analysis ★ Complex analysis—fifth Romanian-Finnish seminar. Part 2. 85h:00013b

## Symposium:

Algebraic groups and related topics ★ Algebraic groups and related topics. (Japanese) 85h:14001

Prehomogeneous vector spaces and related topics ★ Prehomogeneous vector spaces and related topics. (Japanese) 85g:11008

Recent results on singularities of varieties ★ Recent results on singularities of varieties. 85m:14002

Warsaw ★ Complex analysis. 85g:30001

## 32Axx Holomorphic functions of several complex variables

## 32A05 Power series, series of functions

Abul-Ex., M. A. See Sayyed, K. A. M., 85g:32001

Alsenberg, L. A. (with Leinartas, E. K.) Multidimensional Hadamard composition and Szegő kernels. (Russian) 85a:32002

Kishka, Z. M. G. See Sayyed, K. A. M., 85g:32002 and 85g:32003

Korobelnik, Yu. F. See Lê Khai Hô, 85f:32002

Leinartas, E. K. See Alsenberg, L. A., 85a:32002

Lê Khai Hô (with Korobelnik, Yu. F.) Representing systems of exponents in polycylindrical domains. (Russian) 85f:32002

Sayyed, K. A. M. Effectiveness of composite sets of polynomials of two complex variables. (Arabic summary) 85j:32001

(with Abul-Ex., M. A.) Linear substitution for functions and sets of polynomials of two complex matrices. (Arabic summary) 85g:32001

(with Kishka, Z. M. G.) Order of magnitude of coefficients of prime constituent sets of power composite sets. (Arabic summary) 85g:32002

(with Kishka, Z. M. G.) Composition of analytic functions of two complex matrices. (Arabic summary) 85g:32003

Tsegelik, G. G. See Zakharevich, L. I., (Not in MR)

Trvil', M. M. Hartogs-Faber series and domains. (Russian) 85i:32003

Zakharevich, L. I. (with Tsegelik, G. G.) On the construction of majorants and Newton diagrams of generalized double power series. (Russian) (Not in MR)

secondary classifications (32A05)

Avdeev, F. S. A multidimensional uniqueness theorem. (Russian) 85d:32004

Colzani, Leonardo Cesaro means of power series. (Italian summary) 85c:32006

Fuka, Jaroslav A remark on Hartogs' double series. 85h:32001

## 32A07 Special domains (Reinhardt, Hartogs, tube domains, etc.)

Békollé, David Le dual de la classe de Bergman  $A^1$  dans le complexifié du cône sphérique. (English summary) [The dual of the Bergman space  $A^1$  on the tube over the spherical cone] 85a:32003

Gruman, Lawrence The zeros of functions of finite order in  $C^n$ . 85d:32003

Hahn, Kyong T. Holomorphic functions with positive real part on complete circular domains. 85k:32004

Lê Khai Hô Properties of multiple representative systems of exponentials. (Russian) 85m:32001

Vladimirov, V. S. The Blaschke product in the "generalized unit disc" and a complete orthonormal system in the future tube. (Russian) 85k:32005

Wainberg, Irena (with Żywiec, Lucja) On some two-parameter family of holomorphic functions of two complex variables. (Russian and Polish summaries) 85c:32002

Żywiec, Lucja See Wainberg, Irena, 85c:32002

secondary classifications (32A07)

Boichu, D. (with Coeuré, G.) Integral representation of the Bergman kernel function and Ramadanov's conjecture. (Russian) 85f:32042b

(with Coeuré, G.) Sur le noyau de Bergman des domaines de Reinhardt. [On the Bergman kernel of Reinhardt domains] 85f:32042a

Coeuré, G. See Boichu, D., 85f:32042a and 85f:32042b

Vigné, Jean-Pierre Automorphismes analytiques d'un domaine de Reinhardt borné d'un espace de Banach à base. [Analytic automorphisms of a bounded Reinhardt domain in a Banach space with a basis] 85i:32044

Vladimirov, V. S. Functions of several complex variables in mathematical physics. (Russian) 85f:32001

Wong, Pit-Mann On umbilical hypersurfaces and uniformization of circular domains. 85k:32030

Yang, Paul C. Geometry of tube domains. 85m:32014

## 32A10 Holomorphic functions

Berenstein, Carlos A. A test for holomorphy in the unit ball of  $C^n$ . 85k:32006

Burbea, Jacob Norm inequalities for holomorphic functions of several complex variables. 85a:32004

Chen, Gong Ning Iteration for holomorphic maps of the open unit ball and the generalized upper half-plane of  $C^n$ . 85c:32001

Fuka, Jaroslav A remark on Hartogs' double series. 85h:32001

Gigante, Giuliana The identity theorem for holomorphic functions of several variables. (Italian. English summary) 85j:32002

Nguyen Thanh Van Sur les fonctions analytiques  $f(x, y)$  dont l'ensemble des zéros par rapport à  $y$  est algébrique. [On the analytic functions  $f(x, y)$  for which the set of zeros with respect to  $y$  is algebraic] 85m:32002

Nikić, M.  $M$ -holomorphic functions. (Serbo-Croatian. English summary) 85g:32004

Tannenbaum, Allen On a certain class of real algebras which are projective free. 85m:32003

Yoshino, Kunio Polya's theorem for nonentire functions. 85c:32002

secondary classifications (32A10)

Alencar, Raymundo (with Aron, Richard M.; Dineen, Seán) A reflexive space of holomorphic functions in infinitely many variables. 85b:46050

Aron, Richard M. See Alencar, Raymundo; et al., 85b:46050

Çavuş, A. A note on the homomorphisms of  $H(U^n)$  and the holomorphic mappings of  $U^n$ . 85f:32020

Dimiev, S. G. Propriétés locales des fonctions presque-holomorphes. [Local properties of almost holomorphic functions] 85m:53031

Dineen, Seán See Alencar, Raymundo; et al., 85b:46050

Dwilewicz, Roman Division of Cauchy-Riemann functions on hypersurfaces. 85f:32034

Hahn, Kyong T. Holomorphic functions with positive real part on complete circular domains. 85k:32004

Hakim, Monique (with Sibony, Nessim) Valeurs au bord des modules de fonctions holomorphes. [Boundary values of moduli of holomorphic functions] 85c:32008

Lê Khai Hô Properties of multiple representative systems of exponentials. (Russian) 85m:32001

Lincuk, S. S. Representation of continuous linear operators acting in spaces of analytic functions of several variables. (Russian) 85m:47020

Matsuoka, Yasuo On the zero sets of functions in the Bergman spaces and the Hardy spaces. 85m:32005

Moss, William F. (with Weyland, Nicholas J.) Zeros of functions of finite order on the ball. 85b:32014

Olešnik, V. L. The Carleson embedding theorem for a Bergman space. (Russian) 85b:46038

Rudol, K. On spectral mapping theorems. 85c:46045

Shekhorokh, A. I. Some majorant properties of holomorphic functions in  $C^n$ . (Russian) 85c:32011

Sibony, Nessim See Hakim, Monique, 85c:32008

Safranec, F. H. Interpolation and domination by positive definite kernels. 85h:32021

Weyland, Nicholas J. See Moss, William F., 85b:32014

Zhuang, Qi Tai A generalization of Schwarz's lemma. 85b:32039

## 32A15 Entire functions

Avdeev, F. S. A multidimensional uniqueness theorem. (Russian) 85d:32004

Bloom, Thomas Polynomial interpolation for entire functions on  $C^n$ . 85i:32004

Fedyuk, V. F. The Fourier transform of some entire functions of several variables. (Russian. Tajiki summary) 85c:32003

Lekshin, B. I. Sets of order reduction of entire functions in  $C^n$ . (Russian) 85b:32001

Monako, T. P. Growth of entire functions represented by a multidimensional Dirichlet series. (Russian) (See 85k:35001)

Ronkin, A. L. Irreducibility of quasipolynomials. (Russian) 85c:32003

Ronkin, L. I. Continuation with estimates of functions holomorphic on the null set of a pseudopolynomial. (Russian) 85d:32005

Sarkar, P. K. On order and type of an entire function in several complex variables represented by multiple Dirichlet series. 85j:32003

Somasundaram, D. A note order and type of entire functions of several complex variables. 85k:32007

secondary classifications (32A15)

Berenstein, Carlos A. (with Struppa, Daniele Carlo) On explicit solutions to the Besout equation. 85c:15032

Dubinskii, Yu. A. Pseudodifferential operators with complex variables and their applications. (Russian) 85b:35070

Estévez Toranzo, Margarita A square summable topology in the space of entire functions on a sequence space. (Spanish. English summary) 85j:46076

Hansen, Sönke On the "fundamental principle" of L. Ehrenpreis. 85h:35054

Struppa, Daniele Carlo The fundamental principle for systems of convolution equations. 85h:46062

See also Berenstein, Carlos A., 85c:15032

Yoshino, Kunio Polya's theorem for nonentire functions. 85c:32002

## 32A17 Normal families

secondary classifications (32A17)

Cima, J. A. (with Krantz, Steven G.) The Lindelöf principle and normal functions of several complex variables. 85b:32007

Krantz, Steven G. See Cima, J. A., 85b:32007

## 32A20 Meromorphic functions

Ryan, John Singularities and Laurent expansions in complex Clifford analysis. 85a:32005

secondary classifications (32A20)

Abrahamson, Lelf Holomorphic mappings with prescribed Taylor expansions. 85k:46054

Cima, J. A. (with Krantz, Steven G.) The Lindelöf principle and normal functions of several complex variables. 85b:32007

Jimbo, Michio (with Miwa, Tetsuji) Studies on holonomic quantum fields. XVII. 85h:82016



Krantz, Steven G. See Cima, J. A., 85b:32007  
 Miwa, Tetuji See Jimbo, Michio, 85b:32016

32A22 Nevanlinna theory: growth estimates (For geometric theory, see 32H25, 32H30.)

Bonami, Aline (with Charpentier, Philippe) Solutions de l'équation  $\bar{\partial}$  et zéros de la classe de Nevanlinna dans certains domaines faiblement pseudo-convexes. (English summary) [Solutions of the  $\bar{\partial}$ -equation and zeros of the Nevanlinna class in certain weakly pseudoconvex domains] 85f:32003

Bonneau, Pierre Un théorème de division. (English summary) [A division theorem] 85c:32004

Charpentier, Philippe Caractérisations des zéros des fonctions de certaines classes de type Nevanlinna dans le bidisque. (English summary) [Characterizations of the zeros of the functions of certain Nevanlinna type classes in the bidisk] 85g:32005

See also Bonami, Aline, 85f:32003

Dunaevskii, Z. M. Growth of holomorphic curves. (Russian) 85d:32006

Favard, S. Yu. Growth of plurisubharmonic functions. (Russian) 85b:32002

Gaveau, Bernard Intégrales de courbure sur les hypersurfaces analytiques. [Curvature integrals on analytic hypersurfaces] (See 85g:14004)

Hossain, Moqbul On defects and deviation quantities of multivectors. 85m:32004

Nestlerode, W. C. (with Stoll, Manfred) Radial limits of  $n$ -subharmonic functions in the polydisc. 85b:32002

Nochka, E. I. On a theorem from linear algebra. (Russian) 85c:32004

Pflug, Peter Applications of the existence of well growing holomorphic functions. 85c:32005

Shi, Ji Hual On the bound of convexity of the family of biholomorphic maps in the unit ball of  $C^n$ . 85b:32003

Shiffman, Bernard A general second main theorem for meromorphic functions on  $C^n$ . 85c:32006

Stoll, Manfred See Nestlerode, W. C., 85b:32002

Stoll, Wilhelm Value distribution and the lemma of the logarithmic derivative on polydiscs. 85d:32007

secondary classifications (32A22)

Biancofiore, Aldo Second main theorem without exceptional intervals in value distribution theory. (Italian summary) 85c:32044

An extension of the class of meromorphic maps satisfying the small Griffiths' conjecture. (Italian summary) 85i:32036

Charpentier, Philippe Sur les zéros des fonctions de type Nevanlinna dans le bidisque. [On the zeros of functions of Nevanlinna type in the bidisk] (See 85i:32002)

Dektyarev, I. M. The multidimensional relation of defects without the assumption concerning general position. (Russian) 85f:32046

Henson, C. Ward (with Rubel, Lee A.) Some applications of Nevanlinna theory to mathematical logic: identities of exponential functions. 85h:03015

Masser, D. W. On certain functional equations in several variables. 85e:11049

Molzon, R. E. Blaschke conditions for holomorphic mappings. 85m:32020

Mori, Seiki Remarks on holomorphic mappings. 85i:32045

An application of the lemma on the logarithmic derivative in several complex variables due to A. Vitter. 85i:32037

Rubel, Lee A. See Henson, C. Ward, 85h:03015

Shabat, B. V. ★ Распределение значений голоморфных отображений. (Russian) [Distribution of values of holomorphic mappings] 85b:32040

32A25 Integral representation

Aisenberg, L. A. (with Yuzhakov, A. P.) ★ Integral representations and residues in multidimensional complex analysis. 85a:32006

Békollé, David Le dual de la classe de Bergman  $A^1$  dans le transformé de Cayley de la boule unité de  $C^n$ . (English summary) [The dual of the Bergman space  $A^1$  on the Cayley transform of the unit ball in  $C^n$ ] 85b:32004

Berenstein, Carlos A. An application of the Anderson-Berndtson integral representation formula. 85i:32009

Berndtson, Bo A formula for interpolation and division in  $C^n$ . 85b:32005

Chen, Shu Jin On Cauchy integrals in the spaces  $C^n$ . (Chinese) (Not in MR)

The Leray-Stokes formula on a polyhedral domain in the space  $C^n$ . (Chinese) (Not in MR)

Dautov, Sh. A. Some integral formulas in multidimensional complex analysis and their applications. (Russian) 85h:32003

Gasiev, A. Necessary and sufficient conditions for continuity of the Martinelli-Bochner integral. (Russian) 85a:32007

Gong, Sheng (with Shi, Ji Hual) Singular integrals in several complex variables. I. Henkin integrals of strictly pseudoconvex domain. (Chinese summary) 85c:32005

(with Shi, Ji Hual) Singular integrals in several complex variables. I. The Henkin integrals on strictly pseudoconvex domains. 85j:32004

(with Shi, Ji Hual) Singular integrals in several complex variables—Henkin integrals on a strongly pseudoconvex domain. (Chinese) (Not in MR)

Harvey, Reese (with Polking, John C.) The  $\bar{\partial}$ -Neumann solution to the inhomogeneous Cauchy-Riemann equation in the ball in  $C^n$ . 85c:32006

Landucci, Mario Some integral representation formulas for domains of the type  $|z_1|^2 + |z_2|^{2\alpha} \leq 1$ . (Italian summary) 85f:32004

Laurent-Thibaut, Christine Formules intégrales de Koppelman sur une variété de Stein. [Koppelman integral formulas on a Stein manifold] 85d:32008

(Leifman, Lev J.) See Aisenberg, L. A., 85a:32006

Lieb, Ingo (with Range, R. Michael) Integral representations on Hermitian manifolds: the  $\bar{\partial}$ -Neumann solution of the Cauchy-Riemann equations. 85h:32004

(McFaden, H. H.) See Aisenberg, L. A., 85a:32006

Polking, John C. See Harvey, Reese, 85c:32006

Range, R. Michael See Lieb, Ingo, 85h:32004

Sergeev, A. G. Complex geometry and integral representations in the future tube in  $C^3$ . (Russian. English summary) 85b:32006

Shi, Ji Hual See Gong, Sheng, 85c:32005; Gong, Sheng, 85j:32004 and (Not in MR)

Yuzhakov, A. P. See Aisenberg, L. A., 85a:32006

Zappa, Paolo On a generalization of the Weierstrass  $p$ . (Italian. English summary) 85a:32008

secondary classifications (32A25)

Aisenberg, L. A. (with Leinartas, E. K.) Multidimensional Hadamard composition and Szegő kernels. (Russian) 85a:32002

Berenstein, Carlos A. (with Yger, A.) Le problème de la déconvolution. [The deconvolution problem] 85i:46048

Bonami, Aline (with Charpentier, Philippe) Solutions de l'équation  $\bar{\partial}$  et zéros de la classe de Nevanlinna dans certains domaines faiblement pseudo-convexes. (English summary) [Solutions of the  $\bar{\partial}$ -equation and zeros of the Nevanlinna class in certain weakly pseudoconvex domains] 85f:32003

Charpentier, Philippe See Bonami, Aline, 85f:32003

Egorychev, G. P. ★ Integral representation and the computation of combinatorial sums. 85a:05006

Khenkin, G. M. (with Polyakov, P. L.) Prolongement des fonctions holomorphes bornées d'une sous-variété du polydisque. (English summary) [Continuation of bounded holomorphic functions defined on a submanifold of the polydisc] 85i:32021

(Leifman, Lev J.) See Egorychev, G. P., 85a:05006

Leinartas, E. K. See Aisenberg, L. A., 85a:32002

Lieb, Ingo (with Range, R. Michael) On integral representations and a priori Lipschitz estimates for the canonical solution of the  $\bar{\partial}$ -equation. 85f:32033

(McFaden, H. H.) See Egorychev, G. P., 85a:05006

Polyakov, P. L. See Khenkin, G. M., 85i:32021

Range, R. Michael See Lieb, Ingo, 85f:32033

Vasilescu, F.-H. A multidimensional spectral theory in  $C^*$ -algebras. 85g:46009

Vladimirov, V. S. Functions of several complex variables in mathematical physics. (Russian) 85f:32001

Yger, A. See Berenstein, Carlos A., 85i:46048

32A27 Local theory of residues [See also 32C30.]

Talkh, A. K. Local residues in  $C^n$ . Algebraic applications. (Russian) 85k:32010

secondary classifications (32A27)

Aisenberg, L. A. (with Yuzhakov, A. P.) ★ Integral representations and residues in multidimensional complex analysis. 85a:32006

Kersken, Masumi Cousincomplex und Nennersysteme. [Cousin complex and systems of denominators] 85h:32014

(Leifman, Lev J.) See Aisenberg, L. A., 85a:32006

(McFaden, H. H.) See Aisenberg, L. A., 85a:32006

Safonov, K. V. (with Tsikh, A. K.) Singularities of the Grothendieck parametric residue and diagonals of a double power series. (Russian) 85i:32014

Saito, Kyoji The higher residue pairings  $K_F^{(k)}$  for a family of hypersurface singular points. 85d:32043

Talkh, A. K. See Safonov, K. V., 85i:32014

Yuzhakov, A. P. See Aisenberg, L. A., 85a:32006

32A30 Other generalizations of function theory of one complex variable (should also be assigned at least one classification number from Section 30) {For functions of several hypercomplex variables, see 30G35.}

Brodskii, A. A. Quasiconformal extension of biholomorphic mappings. (Russian) 85f:32005

Khokhlov, Yu. E. Parametric families of biholomorphic mappings. (Russian) 85d:32009

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 Bedford, Eric Levi flat hypersurfaces in  $C^2$  with prescribed boundary: stability. 85d:32020  
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- Hangou, Nicholas (with Trèves, François) Propagation of holomorphic extendability of CR functions. 85c:58102
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- 32E35 Global boundary behavior of holomorphic functions

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### 32F20 Geometric results on $\bar{\partial}$ -Neumann problems [See also 35N15.]

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Cumenge, Anne Extension dans des classes de Hardy de fonctions holomorphes et estimations de type "mesures de Carleson" pour l'équation  $\bar{\partial}$ . (English summary) [Extension in Hardy classes of holomorphic functions and "Carleson measure"-type estimates for the  $\bar{\partial}$ -equation] 85j:32005

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M. Kashiwara). [Differential systems with simple characteristics and real-complex structures (after M. S. Baouendi and F. Trèves; M. Sato, T. Kawai and M. Kashiwara)] 85i:58109

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Beals, Michael (with Fefferman, Charles; Grossman, Robert) Strictly pseudoconvex domains in  $C^n$ . 85a:32025

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- Carrell, J. B. Holomorphic  $C^*$  actions and vector fields on projective varieties. 85b:32043  
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- El Zein, Fouad Mixed Hodge structures. 85g:14010  
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- Boech, Siegfried Meromorphic functions on proper rigid analytic varieties. 85j:32046  
 Fresnel, J. (with van der Put, M.) Localisation formelle et groupe de Picard. [Formal localization and Picard groups] 85k:32053  
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- Raynaud, Michel Sous-variétés d'une variété abélienne et points de torsion. [Subvarieties of an abelian variety and torsion points] 85k:14022

#### 32K15 Differentiable functions on analytic spaces, differentiable spaces [See also 58C25.]

- Flondor, Paul (with Pascu, Eugen) Some results on mixed manifolds. 85j:32047  
 Jurcescu, M. Espaces mixtes. [Mixed spaces] 85j:32048  
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- Chern, Shing Shen (with Moser, J. K.) Erratum: "Real hypersurfaces in complex manifolds" [Acta Math. 133 (1974), 219-271; MR 54 #13112]. 85a:32014  
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 Kobayashi, Shoshichi Einstein-Hermitian vector bundles and stability. (See 85g:53003)  
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 Yüan, Hai Shih On elliptic fiber bundles. 85d:32055a  
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#### secondary classifications (32L05)

- Atiyah, M. F. (with Bott, Raoul) The Yang-Mills equations over Riemann surfaces. 85k:14006  
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 Fisher, Robert J., Jr. On the Picard group of a compact complex nilmanifold. 85c:32053  
 Lescure, François Un résultat de type Borel-Weil; application. [A result of Borel-Weil type; application] 85h:32052  
 Élargissement du groupe d'automorphismes pour des variétés quasi-homogènes. [Enlargement of the group of automorphisms for quasihomogeneous manifolds] 85h:32051  
 Lübke, Martin Stability of Einstein-Hermitian vector bundles. 85c:33067  
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 Schumacher, Georg Deformationen holomorpher Faserungen. [Deformations of holomorphic fiberings] 85f:32036

#### 32L10 Sheaves and cohomology of sections of holomorphic vector bundles, general results [See also 18F20, 55N30.]

- Levi, R. N. The Riemann-Roch theorem for complex spaces. (Russian) 85i:32040  
 Lupaciolu, Guido On the spectral sequence for the  $\bar{\partial}$ -cohomology of a holomorphic bundle with Stein fibres. (Italian summary) 85d:32056  
 Navarro Aznar, Vicente On the hard Lefschetz theorem in intersection cohomology. (Spanish. English summary) 85j:32049

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 Harris, Joseph Daniel (with Tu, Loring W.) On symmetric and skew-symmetric determinantal varieties. 85c:14032  
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 $\bar{\partial}$  cohomology of  $(H, C)$ -groups. 85g:32011  
 Murray, M. K. Monopoles and spectral curves for arbitrary Lie groups. 85e:53094  
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- Demilly, Jean-Pierre Estimations  $L^2$  pour l'opérateur  $\bar{\partial}$  d'un fibré vectoriel holomorphe semi-positif au-dessus d'une variété kählérienne complète. [ $L^2$ -estimates for the  $\bar{\partial}$ -operator of a semipositive holomorphic vector bundle over a complete Kähler manifold] 85d:32057

#### secondary classifications (32L15)

- Wong, Bun A class of compact complex manifolds with negative tangent bundles. 85c:32049

#### 32L20 Vanishing theorems

- Abdelkader, Osama Un théorème d'annulation pour les fibrés en droites semi-positifs sur une variété kählérienne faiblement 1-complète. [A vanishing theorem for semipositive line bundles on weakly 1-complete Kähler manifolds] 85i:32041  
 Fujita, Takao Semipositive line bundles. 85f:32051  
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 Schneider, Michael Some remarks on vanishing theorems for holomorphic vector bundles. 85f:32053

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- Demilly, Jean-Pierre Estimations  $L^2$  pour l'opérateur  $\bar{\partial}$  d'un fibré vectoriel holomorphe semi-positif au-dessus d'une variété kählérienne complète. [ $L^2$ -estimates for the  $\bar{\partial}$ -operator of a semipositive holomorphic vector bundle over a complete Kähler manifold] 85d:32057  
 Lescure, François Un résultat de type Borel-Weil; application. [A result of Borel-Weil type; application] 85h:32052

Élargissement du groupe d'automorphismes pour des variétés quasi-homogènes. [Enlargement of the group of automorphisms for quasihomogeneous manifolds] 85h:32051

Majima, Hideoyuki Vanishing theorems in asymptotic analysis. 85g:32014

Vanishing theorems in asymptotic analysis. II. 85g:32015

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### 32L25 Twistor theory, double fibrations

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Khenkin, G. M. See Manin, Yu. I., 85e:32036

Lettner, Jürgen The Penrose transform for bundles nontrivial on the general line. 85j:32051

Manin, Yu. I. (with Khenkin, G. M.) Yang-Mills-Dirac equations as Cauchy-Riemann equations in twistor space. 85e:32036

Flag superspaces and supersymmetric Yang-Mills equations. 85i:32043

Pool, Robert The Ward correspondence and extension theory. 85g:32047

Volevich, I. V. Supersymmetric Yang-Mills theory as a holomorphic bundle over twistors, and super-self-duality. (Russian. English summary) 85a:32037

Ward, R. S. The present state of the twistor programme. (See 85i:32001)

Wells, R. O., Jr. The twistor-geometric representation of classical field theories. (See 85d:50001)

Extensions of holomorphic vector bundles and coupled cohomology equations. 85g:32048

#### secondary classifications (32L25)

Alrapetyan, R. G. (with Gelfand, I. M.; Graev, M. I.; Oganessian, G. R.) Plancherel's formula for an integral transformation connected with a complex of straight lines intersecting an algebraic curve in  $\mathbb{C}^3$  and  $\mathbb{CP}^3$ . (Russian. Armenian summary) 85e:43016

Atiyah, M. F. Geometry and monopoles. (See 85g:81007)

Boyer, Charles P. The geometry of complex self-dual Einstein spaces. 85e:83011

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- secondary classifications (32M10)
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- Yoshida, Masaaki Discrete reflection groups in the parabolic subgroup of  $SU(n, 1)$  and generalized Cartan matrices of Euclidean type. **85g:32053**
- 32M15 Hermitian symmetric spaces, bounded symmetric domains  
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- Bassanelli, Giovanni On endomorphisms and horospheres of the ball in  $C^n$ . (Italian) (See **85g:14004**)
- Békollé, David Le dual de la classe de Bergman  $A^1$  dans le complexifié du cône sphérique. (English summary) [The dual of the Bergman space  $A^1$  on the tube over the spherical cone] **85a:32003**
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- 32M99 None of the above, but in this section
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- 32Nxx Automorphic functions [See also 11Fxx, 20H10, 22E40, 30F35.]
- 32N05 General theory of automorphic functions of several complex variables
- Nagata, Shōyū Confluent hypergeometric functions on an exceptional domain. **85j:32056**

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- Harris, Michael Eisenstein series on Shimura varieties. 85j:11062  
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- Böcherer, Siegfried Über die Fourier-Jacobi-Entwicklung Siegelscher Eisensteinreihen. [On the Fourier-Jacobi expansion of Siegel Eisenstein series] 85i:11045  
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 Zucker, Steven W.  $L_2$ -cohomology and intersection homology of locally symmetric varieties. 85a:58006

## 32N15 Automorphic functions in symmetric domains

- Anderson, Greg W. Theta functions and holomorphic differential forms on compact quotients of bounded symmetric domains. 85i:33047  
 Tong, Yue Lin Lawrence Special cycles, harmonic forms and invariant theory. 85m:33035  
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### 33-XX SPECIAL FUNCTIONS (33-XX deals with the properties of functions as functions. General systems of orthogonal functions are treated in 42C05. Expansions in orthogonal functions are treated in 42C10, 42C15.)

## 33-00 Handbooks, dictionaries, and other reference works

- Brychkov, Yu. A. See Prudnikov, A. P.; et al., 85b:33002  
 Filippov, Yu. F. ★ Таблицы неопределенных интегралов от высших трансцендентных функций. (Russian) [Tables of indefinite integrals of higher transcendental functions] 85b:33001  
 Lomkatat, Ts. D. ★ Таблицы нулей присоединенной функции Лежандра  $P_n^m(\cos \theta)$  относительно параметра  $n$  при  $m = 1$  и  $\theta = 1^\circ(1^\circ)90^\circ$ . (Russian) [Tables of zeros of the associated Legendre function  $P_n^m(\cos \theta)$  with respect to the parameter  $n$  when  $m = 1$  and  $\theta = 1^\circ(1^\circ)90^\circ$ ] (Not in MR)  
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## 33-01 Elementary exposition; textbooks

- (Gradshteyn, I. S.) See Krupnikov, E. D., 85a:33001  
 Krupnikov, E. D. Table errata: Table of integrals, series, and products [Academic Press, New York, 1980; MR 81g:33001] by I. S. Gradshteyn and I. M. Ryzhik. 85a:33001  
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 Ryzhik, I. M. See Krupnikov, E. D., 85a:33001

## 33-02 Advanced exposition (research surveys, monographs, etc.)

- Exton, Harold ★  $q$ -hypergeometric functions and applications. 85g:33001  
 (Slater, L. J.) See Exton, Harold, 85g:33001

## 33-03 Historical (must also be assigned at least one classification number from Section 01)

## secondary classifications (33-03)

- Ayoub, Raymond The lemniscate and Fagnano's contributions to elliptic integrals. 85g:01015  
 Berndt, Bruce C. Chapter 11 of Ramanujan's second notebook. 85a:01043

(Fagnano, Giulio) See Ayoub, Raymond, 85g:01015

## 33-04 Explicit machine computation and programs (not the theory of computation or programming)

## secondary classifications (33-04)

- Shogen, K. See Toyama, N., 85j:33006  
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## 33A10 Exponential and trigonometric functions

Zucker, I. J. Some infinite series of exponential and hyperbolic functions. 85f:33002

## secondary classifications (33A10)

- Pethović, Miodrag S. On a generalisation of Esseen's inequality. (Serbo-Croatian summary) 85m:26025

## 33A15 Gamma and beta functions

- Garay de Pablo, José (with Parrilla Hernández, María José) Calculating limits by a Gauss formula for the incomplete gamma function. (Spanish. English summary) 85j:33001  
 Găvruta, P. Some properties of gamma function. (Romanian summary) (Not in MR)  
 Kairies, H.-H. (with Muldoon, Martin E.) Some characterizations of  $q$ -factorial functions. 85c:33001  
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 Lamphere, Robert L. Elementary proof of a formula of Ramanujan. 85k:33001  
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- Bank, Steven B. A note on zeros of differential polynomials in the gamma function. 85h:30007  
 Gupta, Arjun K. See Tang, Jen, 85h:62069  
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 Moak, Daniel S. The  $q$ -analogue of Stirling's formula. 85g:05023  
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 Schell, H.-J. Gleichmäßige asymptotische Entwicklungen für Parameterintegrale mit zwei reellen Parametern. (English and Russian summaries) [Uniform asymptotic expansions of parameter integrals with two real parameters] 85c:41049  
 Gleichmäßige asymptotische Entwicklungen für unvollständige Integrale. (English and Russian summaries) [Uniform asymptotic expansions for incomplete integrals] 85d:41030  
 Tang, Jen (with Gupta, Arjun K.) On the distribution of the product of independent beta random variables. 85h:62069

## 33A20 Error function, probability integral

- Pandey, Hari Datta See Sarma, V. L. N., 85d:33002  
 Sarma, V. L. N. (with Pandey, Hari Datta) Hölder's inequality and the error function. (Hindi. English summary) 85d:33002

## 33A25 Elliptic functions and integrals

- Carlson, B. C. (with Todd, John) The degenerating behavior of elliptic functions. 85m:33002  
 Haruki, H. On a functional equation for Jacobi's elliptic function  $cn(z; k)$ . 85m:33003  
 Kiper, Aye Fourier series coefficients for powers of the Jacobian elliptic functions. 85b:33003  
 Petrov, G. S. The number of zeros of complete elliptic integrals. (Russian) 85j:33002  
 Todd, John See Carlson, B. C., 85m:33002

## secondary classifications (33A25)

- Boyd, John P. Cnoidal waves as exact sums of repeated solitary waves: new series for elliptic functions. 85b:35181  
 Fenchel, Stanimir Über elementäre elliptische Kegeln. [On elementary elliptic cones] 85h:51042  
 Gerasimov, I. A. Calculation of elliptic functions in problems of celestial mechanics. 85k:65017  
 Iida, Shinji (with Yamamura, Masatoshi) Utility of the elliptic function for classical  $SU(2)$ -models of nuclear collective motions. 85b:81253  
 Yamamura, Masatoshi See Iida, Shinji, 85b:81253  
 Zucker, I. J. Some infinite series of exponential and hyperbolic functions. 85f:33002

## 33A30 Simple hypergeometric functions of one and several variables

- Abiodun, R. F. A. (with Sharma, Bhagirath Lal) Expansion of certain hypergeometric functions of three variables. 85c:33002
- Agarwal, Anand Kumar Certain three-term relations between partial theta functions and summation formulae. 85d:33004
- Evans, Ronald J. (with Stanton, Dennis) Asymptotic formulas for zero-balanced hypergeometric series. 85i:33003
- Gasper, George (with Rahman, Mizan) Nonnegative kernels in product formulas for  $q$ -Racah polynomials. I. 85c:33001
- Glasser, M. L. On some integrals arising in mathematical physics. 85i:33004
- Jain, Vinod Kumar See Verma, Arun, 85f:33003
- Luke, Yudel L. (with Ting, Bing Y.; Wimp, Jet) Solution of the difference equation for Gauss' hypergeometric function by use of the tau method. 85d:33005
- Manocha, H. L. Lie algebraic characterizations of two-variable hypergeometric functions. 85k:33002
- See also Srivastava, Hari M., 85m:33010
- Ono, Takashi A generalization of Gauss' theorem on arithmetic-geometric means. 85d:33006
- On certain integrals over spheres. 85g:33002
- Rahman, Misan See Gasper, George, 85c:33001
- Sharma, Bhagirath Lal See Abiodun, R. F. A., 85c:33002
- Shreshtha, R. M. On an expansion of the confluent hypergeometric function in series of Bessel functions. 85g:33003
- Srivastava, Hari M. Certain  $q$ -polynomial expansions for functions of several variables. 85d:33007
- A  $q$ -extension of Bailey's bilinear generating function for the Jacobi polynomials. 85d:33008
- (with Manocha, H. L.) ★ A treatise on generating functions. 85m:33016
- Stanton, Dennis See Evans, Ronald J., 85i:33003
- Ting, Bing Y. See Luke, Yudel L.; et al., 85d:33005
- Verma, Arun (with Jain, Vinod Kumar)  $q$ -analogue of a transformation of Whipple. 85f:33003
- Wagner, Eberhard Asymptotische Darstellungen der hypergeometrischen Funktionen für große Werte eines Parameters. (English and Russian summaries) [Asymptotic representations of the hypergeometric functions for large values of a parameter] 85c:33002
- Asymptotische Entwicklungen der hypergeometrischen Funktionen  $F(a, b, c; z)$  für  $|a| \rightarrow \infty$  und konstante  $b, c, z$ . (English and Russian summaries) [Asymptotic expansions of the hypergeometric functions  $F(a, b, c; z)$  for  $|a| \rightarrow \infty$  and constant  $b, c, z$ ] 85i:33005
- Wimp, Jet See Luke, Yudel L.; et al., 85d:33005
- Ziętak, Krystyna Double Chebyshev series for hypergeometric functions of two variables. (Polish) 85d:33009

secondary classifications (33A30)

- Aakey, Richard (with Wilson, J. A.) A recurrence relation generalizing those of Apéry. 85h:11007
- Berndt, Bruce C. Chapter 11 of Ramanujan's second notebook. 85a:01043
- Beukers, F. (with Matala-Aho, T.; Väinänen, K.) Remarks on the arithmetic properties of the values of hypergeometric functions. 85g:11052
- Chatterjee, S. K. Some integral formulas derived from the integral representation of Hermite polynomials. 85m:33010
- Cohen, M. E. On expansion problems involving addition theorems and Kapteyn series. 85k:33007
- Dickey, James M. Multiple hypergeometric functions: probabilistic interpretations and statistical uses. 85c:62031
- Dwivedi, B. N. See Singh Chandel, R. C., 85d:44005
- Fosta, Dominique Une démonstration combinatoire de l'identité de Pfaff-Saalschütz. (English summary) [A combinatorial proof of the Pfaff-Saalschütz identity] 85e:05018
- Gasper, George A convolution structure and positivity of a generalized translation operator for the continuous  $q$ -Jacobi polynomials. 85c:33006
- (with Rahman, Misan) Product formulas of Watson, Bailey and Bateman types and positivity of the Poisson kernel for  $q$ -Racah polynomials. 85f:33015
- Glaeske, Hans-Jürgen On a convolution structure of a generalized Hermite transformation. 85i:44006
- Hofbauer, Josef A  $q$ -analogue of the Lagrange expansion. 85i:05025
- Kumar, Indra See Prasad, Y. N., 85k:33005
- Ma, Yi Lin A simple binomial approximation for the hypergeometric distribution. (Chinese. English summary) (Not in MR)
- Matala-Aho, T. See Beukers, F.; et al., 85g:11052
- Mathur, Renu See Munot, P. C., 85a:33006
- Munot, P. C. (with Mathur, Renu) Certain integral relations for the multivariable  $H$ -function. 85a:33006
- Ono, Takashi On a generalization of Laplace integrals. 85d:44002
- Prasad, Y. N. (with Kumar, Indra) On transformations of infinite series of the modified  $H$ -function of two variables. (Hindi. English summary) 85k:33005
- Rahman, Misan See Gasper, George, 85f:33015
- Raina, R. K. See Srivastava, Hari M., 85f:05013
- Singh Chandel, R. C. (with Dwivedi, B. N.) Multidimensional Whittaker transforms. 85d:44005
- Srivastava, Hari M. (with Raina, R. K.) Some combinatorial series identities. 85f:05013
- Terada, Toshiaki Fonctions hypergéométriques  $F_1$  et fonctions automorphes. I. [Hypergeometric functions  $F_1$  and automorphic functions. I.] 85g:34009
- Urabe, Jichiroh Hamada's theorem for a certain type of the operators with double characteristics. 85j:35012
- Väinänen, K. See Beukers, F.; et al., 85g:11052
- Wilson, J. A. See Aakey, Richard, 85h:11007
- Yoshida, Haruo A type of second order linear ordinary differential equations with periodic coefficients for which the characteristic exponents have exact expressions. 85f:34050

33A35 Generalized hypergeometric functions of one and several variables ( $E$ -functions,  $G$ -functions,  $H$ -functions, etc.)

- Adamchik, V. S. (with Marichev, O. I.) Representations of functions of hypergeometric type in logarithmic cases. (Russian. English summary) 85d:33010
- Agal, S. N. (with Koul, C. L.) Certain finite double integrals involving  $H$ -functions. (Hindi. English summary) 85a:33002
- Al-Salam, W. A. (with Verma, Arun) On quadratic transformations of basic series. 85j:33003
- Anderson, William J. (with Mathai, A. M.) Various representations of a generalized hypergeometric function through statistical techniques. 85k:33003
- de Angulo, M. E. F. (with de Gómez López, A. M. M.) An integral that involves the Fox  $H$ -function and the generalized function of two variables. (Spanish) 85a:33003
- Aakey, Richard The very well poised  ${}_6F_5$ . II. 85h:33001
- Bhatia, Rita See Manocha, H. L., 85d:33013
- Bohara, R. C. (with Jain, U. C.) Integrals involving the  $H$ -functions of several variables. II. 85h:33002
- Dahiya, R. S. The two-dimensional Laplace transform for  $H$ -functions. 85d:33011
- Denis, R. Y. On certain transformations of basic hypergeometric functions. 85h:33003
- Dhami, H. S. Recurrence relations for an  $E$ -function of matrix argument. 85a:33004
- Solutions of the differential equations of an  $E$ -function. 85a:33005
- Fleiss, Jerry L. Uniform asymptotic expansions of a class of Meijer  $G$ -functions for a large parameter. 85g:33004
- Gokhroo, D. C. (with Saxena, P. K.) An expansion formula for the  $H$ -function of several variables. 85d:33012
- de Gómez López, A. M. M. See de Angulo, M. E. F., 85a:33003
- Guba, Bandana An integral equation involving  ${}_r+3F_{r+2}$  in the kernel. (Hindi. English summary) 85k:33004
- Gupta, Anil Kumar See Singh Chandel, R. C., 85k:33006
- Gupta, L. C. See Saxena, Ram Kishore, 85f:33008
- Hahn, Wolfgang On the paper: "The Rodrigues formula and polynomial differential operators" [J. Math. Anal. Appl. 84 (1981), no. 2, 443-482; MR 83g:33009] by R. Rassa. 85f:33004
- Jain, U. C. See Bohara, R. C., 85h:33002
- Kalla, S. L. See Saxena, Ram Kishore; et al., 85a:33009
- Kant, Shri (with Pandey, Ram Nakshatra) Bilateral generating functions for classical polynomials. 85f:33005
- Karlsson, Per W. Some properties of generalized Srivastava functions. 85f:33006
- Some reduction formulae for double power series and Kampé de Fériet functions. 85h:33004
- Koul, C. L. See Agal, S. N., 85a:33002
- Kumar, Indra See Prasad, Y. N., 85k:33005
- Manocha, H. L. (with Bhatia, Rita) Matrix-oriented results on a new class of polynomials. 85d:33013
- Marichev, O. I. Asymptotic behavior of functions of hypergeometric type. (Russian. English summary) 85b:33003
- See also Adamchik, V. S., 85d:33010
- Mathai, A. M. See Anderson, William J., 85k:33003
- Mathur, B. L. A new expansion formula for a generalized special function of  $n$  variables. 85h:33005
- Mathur, Renu See Munot, P. C., 85a:33006
- Mishra, U. S. See Prasad, Y. N., 85a:33007
- Mittal, P. K. On finite integrals involving Meijer's  $G$ -function. (Hindi. English summary) 85f:33007
- Modi, G. C. See Saxena, Ram Kishore; et al., 85a:33009
- Munot, P. C. (with Mathur, Renu) Certain integral relations for the multivariable  $H$ -function. 85a:33006
- Pandey, Ram Nakshatra See Kant, Shri, 85f:33005
- Prasad, Sankatha (with Singh, Awadhesh Kumar; Prasad, Y. N.) A new generalized  $H$ -function of two variables as kernel of transforms. 85j:33004
- Prasad, Y. N. (with Sharma, S. P.) Some integrals and series relation for two variable  $H$ -polynomial. 85m:33004
- (with Mishra, U. S.) A finite integral involving a Jacobi polynomial and a modified  $H$ -function of several variables. (Hindi. English summary) 85a:33007
- (with Kumar, Indra) On transformations of infinite series of the modified  $H$ -function of two variables. (Hindi. English summary) 85k:33005
- See also Singh, Awadhesh Kumar, 85d:33017 and Prasad, Sankatha; et al., 85j:33004
- Raina, R. K. Certain generating relations involving several variables. 85d:33014
- A theorem connecting two-dimensional Weyl operator and  $H$ -function transform. 85m:33005
- (Rassa, R.) See Hahn, Wolfgang, 85f:33004
- Rathie, A. K. An integral involving generalized hypergeometric functions and  $H$ -function. 85a:33008
- Saigo, Megumi On properties of the Appell hypergeometric functions  $F_2$  and  $F_3$  and the generalized Gauss function  ${}_3F_2$ . 85m:33006
- Saxena, P. K. See Gokhroo, D. C., 85d:33012
- Saxena, Ram Kishore (with Verma, R. U.) Series representation of the  $H$  function of two variables. (Spanish) 85i:33006
- (with Modi, G. C.; Kalla, S. L.) A basic analogue of Fox's  $H$ -function. (Spanish summary) 85a:33009
- (with Gupta, L. C.) Integral representations for certain hypergeometric functions of three variables due to Lauricella and Srivastava. 85f:33008
- Sharma, Chandra K. Expansion formulae involving exponential functions. I. 85d:33016
- (with Shukla, Vijay S.) Some finite and infinite summation formulae for the  $H$ -function of several complex variables. 85d:33015



- (with Shukla, Vijay S.) Double summation formulae for the  $H$ -function of several complex variables. 85f:33009
- Sharma, S. P. See Prasad, Y. N., 85m:33004
- Shreshtha, R. M. On generalized Charlier polynomials. 85f:33010
- Shukla, Vijay S. See Sharma, Chandra K., 85d:33015 and 85f:33009
- Singh, Awadhesh Kumar (with Prasad, Y. N.) Multivariable  $H$ -function with application to temperature distribution in a moving medium. 85d:33017
- See also Prasad, Sankar; et al., 85j:33004
- Singh, N. P. See Srivastava, Hari M., 85b:33004
- Singh Chandel, R. C. (with Yadava, H. C.) Heat conduction and the multiple hypergeometric function of Srivastava and Daoust. 85b:33008
- (with Gupta, Anil Kumar) Two transformation formulas for the generalized multiple hypergeometric function of Srivastava and Daoust. 85b:33008
- Srivastava, Hari M. (with Singh, N. P.) The integration of certain products of the multivariable  $H$ -function with a general class of polynomials. 85b:33004
- Tandon, O. P. Recurrence relations for the  $H$ -function of  $n$  variables. 85d:33018
- Verma, Arun See Al-Salam, W. A., 85j:33003
- Verma, R. U. See Saxena, Ram Kishore, 85i:33006
- Wimp, J. Irreducible recurrences and representation theorems for  ${}_3F_2(1)$ . 85b:33005
- Yadava, H. C. See Singh Chandel, R. C., 85b:33016

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- Alhamed, J. A. H. The second moment for the Meyer-König and Zeller operators. 85f:41021
- Blandin, J. (with Pons, R.; Marcilhacy, G.) General solution of Teukolsky's equation. 85b:33010
- Cabos, Régis See Codacci-Pisanelli, J. P., 85f:70024
- Carlson, B. C. (with Shaffer, Dorothy Browne) Starlike and prestarlike hypergeometric functions. 85j:30014
- Codacci-Pisanelli, J. P. (with Cabos, Régis) Anharmonic oscillators and generalized hypergeometric functions. 85f:70024
- Dwivedi, A. P. (with Sharma, J. P.; Kushwaha, P. S.) Solution of simultaneous dual integral equations. 85c:45006
- Exton, Harold  $q$ -hypergeometric functions and applications. 85g:33001
- de Gómes Lopes, A. M. M. (with Kalla, S. L.) Solving dual integral equations associated with the  $H$ -function by means of the operators  $L$  and  $L^{-1}$ . (Spanish. English summary) 85c:45010
- Handa, S. On multidimensional integral transforms. (Hindi. English summary) 85b:44001
- Kalla, S. L. See Saxena, Ram Kishore, 85c:45012; Niewa de del Pino, M. E., 85g:44005 and de Gómes Lopes, A. M. M., 85c:45010
- Koblitz, Neal  $p$ -adic analog of Heine's hypergeometric  $q$ -series. 85g:11114
- Kolesov, E. T. (with Yakovlev, Yu. S.) Solution of integral equations of the first kind with a kernel in the form of a generalized hypergeometric function. (Russian) 85c:45001
- Kumara Swamy, Y. S. (with Mathur, S. N.) On  $H$ - $H$  transforms. 85a:44003
- Kushwaha, P. S. See Dwivedi, A. P.; et al., 85c:45006
- Mal'boroda, I. N. Construction of lower and upper functions for a boundary value problem of a system of second-order quasilinear parabolic equations. (Russian) 85j:35007
- Marcilhacy, G. See Blandin, J.; et al., 85b:33010
- Mathur, S. N. See Kumara Swamy, Y. S., 85a:44003
- Nagata, Shōji Confluent hypergeometric functions on an exceptional domain. 85j:33006
- Narain, Ram See Prasad, Y. N., 85b:44003
- Nath, K. See Prasad, Y. N., 85i:44008
- Niewa de del Pino, M. E. (with Kalla, S. L.) Fractional integration operators involving the function  $H$  of two variables. II. (Spanish. English summary) 85g:44005
- Pons, R. See Blandin, J.; et al., 85b:33010
- Prasad, Y. N. (with Narain, Ram) On a generalized integral transform involving a product of two multivariable  $H$ -functions as kernel. (Turkish summary) 85b:44002
- (with Nath, K.) Some theorems on the generalized multidimensional integral transform involving a product of two multivariable  $H$ -functions. (Hindi. English summary) 85i:44006
- Riekstins, E. Application of integrals of Mellin-Barnes type for a sharp estimate of the remainder in asymptotic expansions. (Russian) 85a:41037
- Saxena, Ram Kishore (with Kalla, S. L.) An integral equation associated with  ${}_p+2F_{p+1}$ . (Spanish summary) 85c:45012
- Saxena, Vinod Prakash Formal solution of certain new pair of dual integral equations involving  $H$ -functions. 85g:45013
- Shaffer, Dorothy Browne See Carlson, B. C., 85j:30014
- Sharma, J. P. See Dwivedi, A. P.; et al., 85c:45006
- (Sister, L. J.) See Exton, Harold, 85g:33001
- Tymbal, T. B. See Virchenko, N. A., 85c:35033
- Verma, R. U. Integral equations involving the  $G$ -function as kernel. 85i:45011
- Virchenko, N. A. (with Tymbal, T. B.) The boundary value problem  $N$  for a system of partial differential equations with two lines of degeneracy. (Russian. English summary) 85c:35033
- Yakovlev, Yu. S. See Kolesov, E. T., 85c:45001

## 33A40 Cylindrical functions, Bessel functions

- Benton, T. C. Common zeros of two Bessel functions. II. Approximations and tables. 85a:33010
- Burgers, J. M. Summation of series of fractions depending upon the roots of the Airy function. (See 85i:09007)
- Cohen, M. E. On expansion problems involving addition theorems and Kapteyn series. 85b:33007
- Cruz, André (with Sesma, Javier) Modulus and phase of the reduced logarithmic derivative of the Hankel function. 85b:33008

- Elbert, Árpád (with Gatteschi, Luigi; Laforgia, Andrea) On the concavity of zeros of Bessel functions. 85c:33003
- (with Laforgia, Andrea) On the zeros of derivatives of Bessel functions. (Italian summary) 85d:33019
- (with Laforgia, Andrea) An asymptotic relation for the zeros of Bessel functions. 85i:33009
- (with Laforgia, Andrea) On the square of the zeros of Bessel functions. 85a:33011
- Gatteschi, Luigi See Elbert, Árpád; et al., 85c:33003
- Giordano, Carla (with Laforgia, Andrea) Elementary approximations for zeros of Bessel functions. 85c:33004
- Glasser, M. L. A novel class of Bessel function integrals. 85i:33007
- Grona, V. L. Monotonicity of Lommel functions. (Russian) 85b:33007
- Gupta, L. C. Integrals involving Bessel functions. 85b:33007
- Laforgia, Andrea (with Muldoon, Martin E.) Monotonicity and concavity properties of zeros of Bessel functions. 85i:33008
- See also Elbert, Árpád, 85a:33011; Elbert, Árpád; et al., 85c:33003; Giordano, Carla, 85c:33004; Elbert, Árpád, 85d:33019 and 85i:33009
- Muldoon, Martin E. See Laforgia, Andrea, 85i:33008
- Pak, I. N. Roots of sums of certain Schlömilch series. (Russian) 85b:33008
- Paris, R. B. An inequality for the Bessel function  $J_\nu(\nu z)$ . 85d:33020
- Salsner, H. E. Note on the Doëv-Grosswald asymptotic series for generalized Bessel polynomials. 85g:33005a
- Errata: "Note on the Doëv-Grosswald asymptotic series for generalized Bessel polynomials". 85g:33005b
- Sesma, Javier See Cruz, André, 85b:33008
- Simpson, Henry C. (with Spector, Scott J.) Some monotonicity results for ratios of modified Bessel functions. 85d:33021
- Spector, Scott J. See Simpson, Henry C., 85d:33021
- Stadje, W. Probabilistic proofs of some formulas for Bessel functions. 85d:33022
- Thompson, William, Jr. See Vavreck, Andrew N., 85i:33010
- Vavreck, Andrew N. (with Thompson, William, Jr.) Some novel infinite series of spherical Bessel functions. 85i:33010
- Vilgert, Ya. Ya. Expansion of special combinations of modified Bessel functions into series in Chebyshev polynomials. (Russian. English summary) 85d:33023
- Xuan, Shou Zhi A new characteristic property of Bessel functions. (Chinese) (Not in MR)

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- Ahuja, Gopi A formal solution of triple and quadruple integral equations with Hankel kernels. 85c:45009
- Bhattacharya, Rabi Nath (with Gupta, Vijay K.) On the Taylor-Aris theory of solute transport in a capillary. 85d:82114
- Blinder, S. M. Propagators from integral representations of Green's functions for the  $N$ -dimensional free-particle, harmonic oscillator and Coulomb problems. 85j:81003
- Cagnassi, Lina Functions approximable by linear combinations of a predetermined number of Bessel functions. (Italian) 85c:41023
- Eglja, A. See Klokova, J.; et al., 85b:65016
- Forrester, P. J. Extensions of several summation formulae of Ramanujan using the calculus of residues. 85i:40004
- Frank, Evelyn Applications of continued fractions in function theory. 85i:65025
- Gill, John Converging factors for certain continued fractions  $K(a_n/1)$ , where  $|a_n| < 1$ . 85j:40003
- Gupta, Vijay K. See Bhattacharya, Rabi Nath, 85d:82114
- Khalmukhamedov, A. R. The mean-value theorem for an elliptic equation. 85f:35072
- Klokova, J. (with Škřetěna, A.; Eglja, A.) Determination of the solution of an ordinary differential equation from a given asymptotic behavior at infinity. (Russian) 85b:65016
- Klyuchantsev, M. I. Singular differential operators with  $r-1$  parameters, and Bessel functions of a vector index. (Russian) 85d:47052
- Laforgia, Andrea On certain classes of Sturm-Liouville equations. 85f:34049
- Luke, Yuddell L. Use of Padé approximation for  $e^{-x}$  to approximate an integral of a Bessel function. (Spanish summary) 85b:65013
- Obi, E. C. Some local properties of the Rayleigh functions. 85m:33018
- Plessem, Robert Chebyshev series approximations for the zeros of the Bessel functions. 85b:65044
- Pittaluga, Giovanna (with Sacripante, Laura) The zeros of the function  $J_\nu(x) + \lambda x J'_\nu(x)$ . (Italian. English summary) 85d:65016
- Rappoport, Yu. M. A modification of the approximation method. (Russian) 85a:34021
- Sacripante, Laura See Pittaluga, Giovanna, 85d:65016
- Schell, H.-J. Gleichmäßige asymptotische Entwicklungen für Parameterintegrale mit zwei reellen Parametern. (English and Russian summaries) [Uniform asymptotic expansions of parameter integrals with two real parameters] 85c:41049
- Shreshtha, R. M. On an expansion of the confluent hypergeometric function in series of Bessel functions. 85g:33003
- Škřetěna, A. See Klokova, J.; et al., 85b:65016

## 33A45 Spherical functions (Legendre polynomials and functions, spherical harmonics), ultraspherical polynomials

- Ainsworth, O. R. (with Liu, C. K.) Erratum: "An application of Legendre functions in the inversion of the Hilbert matrix" [J. Franklin Inst. 299 (1975), no. 4, 297-299; MR 81 #958]. 85c:33003
- Allaway, W. R. See Al-Salam, W. A.; et al., 85j:33005
- Al-Salam, W. A. (with Allaway, W. R.; Askey, Richard) Sieved ultraspherical polynomials. 85j:33005
- Askey, Richard See Al-Salam, W. A.; et al., 85j:33005
- Bustos, Joaquín (with Imaíl, Mourad) Turán inequalities for ultraspherical and continuous  $q$ -ultraspherical polynomials. 85c:33005
- Fettis, Henry E. Extension of a result of Ainsworth and Liu. 85f:33011

- Ismail, Mourad. See Bustos, Joaquin, 85c:33005  
 Lacroix, N. H. J. On common zeros of Legendre's associated functions. 85f:33012  
 Liu, C. K. See Alnoworth, O. R., 85c:33003  
 Lorch, Lee. Inequalities for ultraspherical polynomials and the gamma function. 85d:33024  
 Sastry, M. S. K. Spin spherical harmonics. 85f:33013  
 Ullah, Nasakat. Evaluation of an integral involving associated Legendre polynomials and inverse powers of  $(1 - X^2)$ . 85b:33008  
 Ursell, F. Integrals with a large parameter: Legendre functions of large degree and fixed order. 85k:33009  
 Virchenko, N. A. A property of a generalized associated Legendre function of the first kind. (Russian) 85g:33006

## secondary classifications (33A45)

- Belevskii, A. M. Expansion of functions in Fourier-Jacobi series. (Russian) 85j:43046  
 Chakrabarti, S. K. On mass-dependent spheroidal harmonics of spin one-half. 85g:83010  
 Chiappetta, L. M. (with Sobel, D. R.) The temperature distribution within a hemisphere exposed to a hot gas stream. 85k:80004  
 Dave, S. K. On the convergence of ultraspherical series. 85m:42026  
 Dunkl, Charles F. Orthogonal polynomials on the sphere with octahedral symmetry. 85a:33013  
 Iliev, L. G. Applications of Laguerre entire functions. 85f:30037  
 Jones, D. S. A uniqueness theorem in elastodynamics. 85k:73028  
 Louis, Alfred K. Orthogonal function series expansions and the null space of the Radon transform. 85j:44003  
 Mardoyan, L. G. (with Pogoyan, G. S.; Sisakian, A. N.; Ter-Antonyan, V. M.) Spheroidal analysis of the hydrogen atom. 85d:81194  
 Nikolaev, A. G. See Protsenko, V. S., 85h:35052  
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 Sharma, G. S. See Sharma, L. K., **85b:34006**

- Sharma, L. K. (with Sharma, G. S.) Recurrence relations for the coefficients of asymptotic expansions for prolate spheroidal and ellipsoidal wave equations. **85b:34006**

- Shukla, D. P. A  $q$ -analogue of Carlitz's operator. **85i:05028**

- Spigler, Renato The linear differential equation whose solutions are the products of solutions of two given differential equations. **85b:34009**

## 34-XX ORDINARY DIFFERENTIAL EQUATIONS

secondary classifications (34-XX)

- Stockhausen, Manfred ★ Mathematische Behandlung naturwissenschaftlicher Probleme. Teil 3. (German) [Mathematical treatment of scientific problems. Part 3] (Not in MR)

34-01 Elementary exposition; textbooks

- Amann, Herbert ★ Gewöhnliche Differentialgleichungen. (German) [Ordinary differential equations] **85f:34001**  
 Arrowsmith, D. K. (with Place, C. M.) ★ Ordinary differential equations. **85a:34001**  
 (Bernardo, Emiliano Aparicio) See Kiselev, A. I.; et al., **85m:34002**  
 Fedoryuk, M. V. ★ Асимптотические методы для линейных обыкновенных дифференциальных уравнений. (Russian) [Asymptotic methods for linear ordinary differential equations] **85m:34001**  
 (Goodspeed, F. M. C.) See Mishchenko, E. F., **85j:34001**  
 Kiselev, A. I. (with Krasnov, M. L.; Makarenko, G. I.) ★ Problemas de ecuaciones diferenciales ordinarias. (Spanish) [Problems in ordinary differential equations] **85m:34002**  
 Knapp, Hans ★ Gewöhnliche Differentialgleichungen. (German) [Ordinary differential equations] **85b:34001**  
 Krasnov, M. L. ★ Обыкновенные дифференциальные уравнения. (Russian) [Ordinary differential equations] **85a:34002**  
 See also Kiselev, A. I.; et al., **85m:34002**  
 Krivosheya, S. A. See Samoilenko, A. M.; et al., **85m:34004**  
 (Lo Bello, Anthony) See Piccinini, L. C.; et al., **85b:34002**  
 Lopatin, Ya. B. ★ Обыкновенные дифференциальные уравнения. (Russian) [Ordinary differential equations] **85m:34003**  
 Makarenko, G. I. See Kiselev, A. I.; et al., **85m:34002**  
 Mishchenko, E. F. (with Rosov, N. Kh.) ★ Differential equations with small parameters and relaxation oscillations. **85j:34001**  
 Perestyuk, N. A. See Samoilenko, A. M.; et al., **85m:34004**  
 Piccinini, L. C. (with Stampacchia, Guido; Vidossich, G.) ★ Ordinary differential equations in  $R^n$ . **85b:34002**  
 Place, C. M. See Arrowsmith, D. K., **85a:34001**  
 Rosov, N. Kh. See Mishchenko, E. F., **85j:34001**  
 Samoilenko, A. M. (with Krivosheya, S. A.; Perestyuk, N. A.) ★ Дифференциальные уравнения. (Russian) [Differential equations] **85m:34004**  
 Stampacchia, Guido See Piccinini, L. C.; et al., **85b:34002**  
 Thompson, J. M. T. An introduction to nonlinear dynamics. **85g:34001**  
 Vidossich, G. See Piccinini, L. C.; et al., **85b:34002**  
 Wan, Frederic Y. M. A regular column on simple but interesting problems in differential equations. **85b:34003**

secondary classifications (34-01)

- Aves, A. ★ Calcul différentiel. (French) [Differential calculus] **85e:58001**  
 Kiselev, A. I. See Krasnov, M. L.; et al., **85a:00006**  
 Krasnov, M. L. (with Kiselev, A. I.; Makarenko, G. I.) ★ Funciones de variable compleja. Cálculo operacional. Teoría de la estabilidad. (Spanish) [Functions of a complex variable. Operational calculus. Stability theory] **85a:00006**  
 (Lindstedt, A.) See Reissig, L., **85k:01031**  
 Makarenko, G. I. See Krasnov, M. L.; et al., **85a:00006**  
 Olariu, Valter See Teodorescu, Nicolae Victor, **85i:35002**  
 Reissig, L. (with Rieksin, E.) The small parameter method and quasiperiodic functions in Lindstedt's work. (Russian) **85k:01031**  
 Rieksin, E. See Reissig, L., **85k:01031**  
 (Shapovalova, T. I.) See Krasnov, M. L.; et al., **85a:00006**  
 Teodorescu, Nicolae Victor (with Olariu, Valter) ★ Ecuații diferențiale și cu derivate parțiale. Vol. III. (Romanian) [Differential and partial differential equations. Vol. III] **85i:35002**  
 Valnberg, B. R. ★ Асимптотические методы в уравнениях математической физики. (Russian) [Asymptotic methods in equations of mathematical physics] **85k:35033**

34-02 Advanced exposition (research surveys, monographs, etc.)

- (Andronov, A. A.) See Bautin, N. N., **85j:34002**  
 Bautin, N. N. ★ Поведение динамических систем вблизи границ области устойчивости. (Russian) [The behavior of dynamical systems near the boundaries of the domain of stability] **85j:34002**  
 Cherepennikov, V. B. ★ Метод функциональных параметров в теории обыкновенных дифференциальных уравнений. (Russian) [The method of functional parameters in the theory of ordinary differential equations] **85k:34001**  
 Drăgan, V. (with Halanay, A.) ★ Perturbații singulare—dezvoltări asimptotice. (Romanian) [Singular perturbations—asymptotic expansions] **85c:34001**  
 Filonenko, N. N. See Zaslavskii, G. M.; et al., **85e:34001**  
 Grebenikov, E. A. (with Ryabov, Yu. A.) ★ Constructive methods in the analysis of nonlinear systems. **85j:34003**  
 Hagedorn, P. ★ Nonlinear oscillations. **85c:34002**  
 Halanay, A. See Drăgan, V., **85c:34001**

- Hale, Jack ★ Теория функционально-дифференциальных уравнений. (Russian) [Theory of functional-differential equations] 85h:34002  
 Mollis, V. P. See Zaslavskii, G. M.; et al., 85e:34001  
 Myahkls, A. D.) See Hale, Jack, 85h:34002  
 Ryabov, Yu. A. See Grebenikov, E. A., 85j:34003  
 (Shimanov, S. N.) See Hale, Jack, 85h:34002  
 Sibirskii, K. S. ★ Введение в алгебраическую теорию инвариантов дифференциальных уравнений. (Russian) [Introduction to the algebraic theory of invariants of differential equations] 85m:34006  
 (Stadler, Wolfram) See Hagedorn, P., 85c:34003  
 (Wadhwa, Ram S.) See Grebenikov, E. A., 85j:34003  
 Zaslavskii, G. M. (with Mollis, V. P.; Filonenko, N. N.) ★ Взаимодействие волн в неоднородных средах. (Russian) [Interaction of waves in inhomogeneous media] 85e:34001

secondary classifications (34-02)

- Aulbach, Bernd ★ Continuous and discrete dynamics near manifolds of equilibria. 85g:34040  
 Harris, C. J. (with Valenza, J. M. E.) ★ The stability of input-output dynamical systems. 85i:93001  
 Markus, L. I. Development of asymptotic methods of the theory of differential equations in the Soviet period. (Ukrainian. Russian summary) 85k:34133  
 Valenza, J. M. E. See Harris, C. J., 85i:93001

### 34-03 Historical (must also be assigned at least one classification number from Section 01)

- Zheng, Zu Xiu Some development and applications of functional-differential equations. (Chinese) 85m:34006

secondary classifications (34-03)

- Bendrikov, G. A. (with Migulin, V. V.; Sidorova, G. A.) Physics of oscillations at the Physics Faculty of Moscow University. (Russian) 85b:01091  
 Bolko, E. S. ★ Школа академика А. А. Андропова. (Russian) [The school of academician A. A. Andronov] 85i:01021  
 Byrdina, T. V. Asymptotic methods of solution of Legendre and Bessel equations. (Russian) 85b:01019  
 (Fontaine des Bertins, Alexis) See Greenberg, John L., 85c:01017  
 Gray, Jeremy The three supplements to Poincaré's prize essay of 1880 on Fuchsian functions and differential equations. 85b:01021  
 Fuchs and the theory of differential equations. 85b:01020a  
 Erratum: "Fuchs and the theory of differential equations". 85b:01020b  
 Grebenikov, E. A. Ordinary differential equations. (Russian) (See 85g:01004)  
 Greenberg, John L. Alexis Fontaine's integration of ordinary differential equations and the origins of the calculus of several variables. 85c:01017  
 (Lindstedt, A.) See Reissig, L., 85h:01031  
 (Liouville, J.) See Litsen, Jesper, 85h:01026  
 Litsen, Jesper Sturm and Liouville's work on ordinary linear differential equations. The emergence of Sturm-Liouville theory. 85h:01026  
 Lykova, O. B. See Mitropol'skii, Yu. A., (85g:01004)  
 (Mandel'shtam, L. I.) See Bendrikov, G. A.; et al., 85b:01091  
 Migulin, V. V. See Bendrikov, G. A.; et al., 85b:01091  
 Mitropol'skii, Yu. A. (with Lykova, O. B.) Asymptotic methods in the theory of nonlinear oscillations. (Russian) (See 85g:01004)  
 (Poincaré, Henri) See Gray, Jeremy, 85b:01021  
 Reissig, L. (with Rieksin, E.) The small parameter method and quasiperiodic functions in Lindstedt's work. (Russian) 85c:01031  
 Rieksin, E. See Reissig, L., 85h:01031  
 Sidorova, G. A. See Bendrikov, G. A.; et al., 85b:01091  
 (Sturm, C.) See Litsen, Jesper, 85h:01026  
 Wanner, G. Über Shi's Gegenbeispiel zum 16. Hilbertproblem. [On Shi's counterexample for Hilbert's 16th problem] 85h:34041  
 Anniversary:  
 Birth of Mandel'shtam, L. I. See Bendrikov, G. A.; et al., 85b:01091

### 34-06 Proceedings, conferences, etc.

- (Everitt, W. N.) See Ordinary differential equations and operators, 85e:34002  
 (Kisilevics, Michal) See Functional differential systems and related topics, 85d:34002  
 (Kozlenko, Yu. V.) See Problems of the modern theory of periodic motions, 85h:34001 and 85h:34002  
 (Kozlov, R. I.) See Dynamics of nonlinear systems, 85d:34001  
 (Lakshmikantham, V.) See Trends in theory and practice of nonlinear differential equations, 85e:34003  
 (Lewis, R. T.) See Ordinary differential equations and operators, 85e:34002  
 (Mastrov, V. M.) See Dynamics of nonlinear systems, 85d:34001 and Method of Lyapunov functions and its applications, 85g:34004  
 (Otrokov, N. F.) See Differential and integral equations, 85g:34003  
 (Sharkovskii, A. N.) See Approximate and qualitative methods of the theory of functional-differential equations, 85g:34002  
 (Vasil'ev, S. N.) See Method of Lyapunov functions and its applications, 85g:34004  
 Approximate and qualitative methods of the theory of functional-differential equations ★ Приближенные и качественные методы теории функционально-функциональных уравнений. (Russian) [Approximate and qualitative methods of the theory of functional-differential equations] 85g:34002  
 Arlington, Tex. ★ Trends in theory and practice of nonlinear differential equations. 85e:34003  
 Blazejewko ★ Functional-differential systems and related topics. 85d:34002

### Conference:

- Functional differential systems and related topics ★ Functional-differential systems and related topics. 85d:34002  
 Trends in theory and practice of nonlinear differential equations ★ Trends in theory and practice of nonlinear differential equations. 85e:34003  
 Differential and integral equations ★ Дифференциальные и интегральные уравнения. Вып. 6. (Russian) [Differential and integral equations. No. 6] 85g:34003  
 Dundee ★ Ordinary differential equations and operators. 85e:34002  
 Dynamics of nonlinear systems ★ Динамика нелинейных систем. (Russian) [Dynamics of nonlinear systems] 85d:34001  
 Functional differential systems and related topics ★ Functional-differential systems and related topics. 85d:34002  
 Method of Lyapunov functions and its applications ★ Метод функций Ляпунова и его приложения. (Russian) [The method of Lyapunov functions and its application] 85g:34004  
 Ordinary differential equations and operators ★ Ordinary differential equations and operators. 85e:34002  
 Problems of the modern theory of periodic motions ★ Проблемы современной теории периодических движений. Вып. 4. (Russian) [Problems of the modern theory of periodic motions. No. 4] 85h:34001  
 Symposium:  
 Ordinary differential equations and operators ★ Ordinary differential equations and operators. 85e:34002  
 Trends in theory and practice of nonlinear differential equations ★ Trends in theory and practice of nonlinear differential equations. 85e:34003

secondary classifications (34-06)

- (Gérard, R.) See Differential equations and Pfaffian systems in the complex field, 85g:58004  
 (Ramis, J.-P.) See Differential equations and Pfaffian systems in the complex field, 85g:58004  
 (Strygin, V. V.) See Approximate methods for investigating differential equations and their applications, 85f:00004  
 (Vasil'eva, A. B.) See Small-parameter methods and their application, 85e:00017  
 All-union school-seminar:  
 Small-parameter methods and their application ★ Методы малого параметра и их применение. (Russian) [Small-parameter methods and their application] 85e:00017  
 Approximate methods for investigating differential equations and their applications ★ Приближенные методы исследования дифференциальных уравнений и их приложения. (Russian) [Approximate methods for investigating differential equations and their applications] 85f:00004  
 Differential equations and Pfaffian systems in the complex field ★ Equations différentielles et systèmes de Pfaff dans le champ complexe. II. (French) [Differential equations and Pfaffian systems in the complex field. II] 85g:58004  
 Equations différentielles et systèmes de Pfaff dans le champ complexe ★ Equations différentielles et systèmes de Pfaff dans le champ complexe. II. (French) [Differential equations and Pfaffian systems in the complex field. II] 85g:58004  
 Minsk ★ Методы малого параметра и их применение. (Russian) [Small-parameter methods and their application] 85e:00017  
 Seminar:  
 Differential equations and Pfaffian systems in the complex field ★ Equations différentielles et systèmes de Pfaff dans le champ complexe. II. (French) [Differential equations and Pfaffian systems in the complex field. II] 85g:58004  
 Small-parameter methods and their application ★ Методы малого параметра и их применение. (Russian) [Small-parameter methods and their application] 85e:00017  
 Symposium:  
 Theory of dynamical systems and its application to nonlinear problems ★ Theory of dynamical systems and its application to nonlinear problems. 85k:58001  
 Theory of dynamical systems and its application to nonlinear problems ★ Theory of dynamical systems and its application to nonlinear problems. 85k:58001  
 Benek, Karel Programming of differential equations with singularities of the type 0/0 in using the extension to power series. (Russian and Czech summaries) (Not in MR)  
 Weldenhammer, F. Der Einfluß der Phasen einer Parametererregung auf die charakteristischen Exponenten. [The influence of the phases of a parameter excitation on the characteristic exponents] (Not in MR)

### 34Axx General theory

- 34A05 Solutions in closed form, integration by quadratures, reduction of differential equations  
 Bogdanova, M. Yu. (with Naumovich, N. F.) Differential equations with an area first integral. (Russian) 85g:34005  
 Bountia, Tamas C. See Ramani, A.; et al., 85h:34004  
 Dimov, Lazo A. On the integrability of two linear differential equations with trigonometric polynomial coefficients. (Macedonian. Russian summary) 85k:34003  
 Dorasi, B. See Ramani, A.; et al., 85h:34004  
 Grammaticos, B. See Ramani, A.; et al., 85h:34004  
 Harten, Leo P. See Wilcox, Ralph M., 85f:34003  
 Huang, Wen Gang A method for solving linear systems with variable coefficients and their integrable types. (Chinese) 85k:34004  
 Inertis Carro, Fernando C. On closed form solutions for the differential matrix Riccati equation problem. 85c:34003  
 Knyazev, A. V. (with Skalyga, V. I.) Matrices of rational differential operators. (Russian) 85k:34005  
 Li, Hong Xiang On the finding of solutions for several classes of higher-order linear differential equations with variable coefficients. (Chinese. English summary) 85h:34003

- Naumovich, N. F. See Bogdanova, M. Yu., 85g:34005
- Oleñik, S. G. Algorithms for the construction of averaging transformations that reduce differential systems to special forms. (Russian) 85m:34007
- Ramani, A. (with Dorazi, B.; Grammaticos, B.; Bountis, Tassos C.) Integrability and the Painlevé property for low-dimensional systems. 85h:34004
- Roach, G. F. On a class of nonhomogeneous multiparameter problems. 85k:34006
- Samodurov, A. A. Parametric representation of the general solution of some first-order differential equations. (Russian. English summary) 85c:34004
- Skalyga, V. I. See Knyasov, A. V., 85k:34005
- Takano, Kyoichi A 2-parameter family of solutions of Painlevé equation (V) near the point at infinity. 85m:34008
- Wilcox, Ralph M. (with Harten, Leo P.) MACSYMA-generated closed-form solutions to some matrix Riccati equations. 85f:34002

## secondary classifications (34A05)

- Barik, Nanigopal On ordinary differential operators associated with some special functions and their application to linear differential equations of higher order. 85j:34046b
- Fényes, Tamás (with Koisk, P.) On a system of algebraic differential equations of the operator field. (Hungarian) 85j:44008
- Flossas, George P. On a field-theoretic nonpolynomial interaction. 85b:81023
- Kecké, Jovan D. A differential-difference equation. 85a:34092
- Kocić, Vlado Lj. Linearization of nonlinear differential equations: third order nonlinear ordinary differential equations equivalent to linear second order equations. 85a:34018
- Koisk, P. See Fényes, Tamás, 85j:44008
- Kuš, M. Integrals of motion for the Lorenz system. 85f:58043
- Léauté, B. (with Marichal, G.) On particular separable solutions of self-dual Yang-Mills equations. 85d:81111
- Marichal, G. See Léauté, B., 85d:81111
- Mukherjee, Manik Chandra A note on Bessel's differential operators. 85j:34046a
- Nishimoto, Katsuyuki On the fractional orders' differintegral equation  $w_\nu + w_{\nu-1}g = f$ . 85m:26008
- Repperger, Daniel W. A doubling approach for determining the solution of Riccati-type equations utilizing matrix continued fractions. 85a:93007
- Revenko, I. V. Group classification and integration of ordinary differential equations of the type  $\ddot{x} = F(\dot{x}, x, t)$ , invariant with respect to certain groups of transformations. (Russian. English summary) 85c:58069
- Shah, Swarupchand M. (with Wiener, Joseph) Distributional and entire solutions of ordinary differential and functional-differential equations. 85c:34010
- Shtefanite, I. M. See Shtefanite, R. M., 85j:34007
- Shtefanite, R. M. (with Shtefanite, I. M.) Polynomial solutions of linear systems of differential equations. (Russian) 85j:34007
- Wiener, Joseph See Shah, Swarupchand M., 85c:34010

## 34A08 Equations not solved with respect to the highest-order derivative, singular solutions

- Ashirov, O. Generalized Cauchy problem for a system of semiexplicit differential equations. (Russian. English summary) 85d:34003
- Boyarinov, Yu. E. Systems of ordinary differential equations which are unsolvable with respect to the derivatives. (Russian) 85j:34004
- Chistyakov, V. F. On methods for solving singular linear systems of ordinary differential equations. (Russian) 85b:34004
- Prosenyuk, L. G. (with Yatsenko, S. A.) Behavior of solutions of a second-order real differential equation that is not solvable with respect to the highest derivative. (Russian) 85a:34003
- Schulze, Reinhard Darstellung von nichtauflösbaren impliziten nichtlinearen Differentialgleichungen in Zustandsform und Existenzaussagen über die Lösbarkeit. (English and Russian summaries) [State-space representation of singular nonlinear implicit differential equations and the existence of solutions] 85c:34005
- Yatsenko, S. A. See Prosenyuk, L. G., 85a:34003

## secondary classifications (34A08)

- Denisov, I. V. Asymptotic solution of differential equations in a Banach space, which are not solved with respect to the derivative. (Russian) 85j:34125
- Dmitrienko, V. T. A two-point boundary value problem for second-order differential equations that are not solved with respect to the highest derivative. (Russian) 85h:34018
- Jepson, A. (with Spence, A.) On implicit ordinary differential equations. 85i:65088
- Kuttler, Kenneth Implicit evolution equations. 85c:34009
- Petold, Linda R. A description of DASSL: a differential/algebraic system solver. (See 85i:00014)
- Spence, A. See Jepson, A., 85i:65088

## 34A10 Initial value problems: general existence and uniqueness theorems; continuous dependence of solutions on parameters, initial conditions and boundary conditions [See also 45D05.]

- Aftabizadeh, A. R. Escape time by fixed point theorem. (See 85c:34003)
- Bors, Dan A Peano existence theorem for solutions of a differential system with set functions. (See 85g:00019)
- Campbell, Stephen L. Consistent initial conditions for singular nonlinear systems. 85k:34007
- One canonical form for higher-index linear time-varying singular systems. 85k:34008
- He, Jian Xun On general uniqueness theorems for solutions of discontinuous systems. (Chinese) 85g:34006
- Israllov, S. V. A general functional problem for ordinary differential equations. (Russian) 85f:34003

- Kegley, J. Colby A global existence and uniqueness theorem for a Riccati equation. 85a:34004
- Konyukhova, N. B. Singular Cauchy problems for systems of ordinary differential equations. (Russian) 85h:34005
- Ligaea, J. Remarks on generalized solutions of ordinary differential equations. (See 85d:34002)
- Loseva, N. V. Application of a multidimensional Laplace transform for solution of a nonstationary Riccati equation. (Russian) 85j:34005
- Rachunková, Irena A nonlinear problem for nth-order differential systems. (Russian) 85j:34006
- Shtefanite, I. M. See Shtefanite, R. M., 85j:34007
- Shtefanite, R. M. (with Shtefanite, I. M.) Polynomial solutions of linear systems of differential equations. (Russian) 85j:34007
- Skripnik, V. P. Degenerate systems and a degenerate parameter. (Russian) 85b:34005
- Tovmasyan, N. E. The Cauchy problem for irregular differential equations with constant coefficients on the half axis in a class of generalized functions. (Russian. English and Georgian summaries) 85j:34008
- Voráček, Jan Über eine nichtlineare parametrische Differentialgleichung dritter Ordnung. [On a nonlinear parametric third-order differential equation] 85a:34005

## secondary classifications (34A10)

- Arrate Pena, Manuel (with Palencia, C.) Local existence and uniqueness for ordinary differential equations in Banach spaces. (Spanish. English summary) 85j:34124
- Ashirov, O. Generalized Cauchy problem for a system of semiexplicit differential equations. (Russian. English summary) 85d:34003
- Beresanskii, L. M. A linear functional-differential equation. Continuous dependence on parameters. (Russian) 85g:34057
- Dhaigude, D. B. A note on comparison theorems. 85c:34039
- Goecks, David M. (with Henderson, Johnny) Uniqueness of solutions of right focal problems for third order differential equations. 85i:34006
- Henderson, Johnny See Goecks, David M., 85i:34006
- Hirano, Norimichi Local existence theorems for nonlinear differential equations. 85b:34071
- Lemmert, Roland (with Volkman, Peter) Differential inequalities for terminal value problems. 85f:34016
- Palencia, C. See Arrate Pena, Manuel, 85j:34124
- Parhi, N. On the existence and stability of solutions of a class of neutral functional-differential equations. 85a:34093
- Pasika, E. E. An example of a first-order differential equation in a Hilbert space without continuous dependence of the solution on the initial condition. (Russian) 85c:34070
- Prosenyuk, L. G. (with Yatsenko, S. A.) Behavior of solutions of a second-order real differential equation that is not solvable with respect to the highest derivative. (Russian) 85a:34003
- Qin, Yuan Xun Complex qualitative theory of ordinary differential equations. (Chinese) 85c:34005
- Šedrov, Andrej Differential equations in constructive analysis and in the recursive realizability topos. 85h:03063
- Schatsman, M. Spatial structuring in a model in neurophysiology. (French summary) 85h:92014
- Schulze, Reinhard Darstellung von nichtauflösbaren impliziten nichtlinearen Differentialgleichungen in Zustandsform und Existenzaussagen über die Lösbarkeit. (English and Russian summaries) [State-space representation of singular nonlinear implicit differential equations and the existence of solutions] 85c:34005
- Sidorov, N. A. A class of degenerate differential equations with convergence. (Russian) 85j:34139
- Szűcs, Stanislaw On the existence of solutions of differential equations in Banach spaces. (Russian summary) 85f:34119
- Volkman, Peter See Lemmert, Roland, 85f:34016
- Walter, Wolfgang On Max Müller's existence-comparison theorem for infinite systems of ordinary differential equations. 85h:34013
- Wang, Lian (with Wang, Mu Qiu) Qualitative method in analysis of a phase-locked loop with tangent characteristic and frequency modulation input. II. (Chinese) 85c:34047
- Wang, Mu Qiu See Wang, Lian, 85c:34047
- Yatsenko, S. A. See Prosenyuk, L. G., 85a:34003

## 34A15 Initial value problems: continuation of solutions

- Campanini, Rita Continuity and partial boundedness of the solutions of systems of differential equations. (Italian. English summary) 85h:34008
- Hara, Tadayuki (with Yoneyama, Toshiaki; Sugie, J.) Continuation results for differential equations by two Liapunov functions. 85k:34009
- Markov, S. N. Behavior of solutions of second-order systems under analytic continuation. (Russian) 85j:34009
- Singularities of solutions of second-order systems in a real domain. (Russian) 85a:34006
- Medetbekova, R. A. Boundedness of the solution and its derivatives for a second-order nonlinear differential equation. (Russian) 85c:34004
- Sugie, J. See Hara, Tadayuki; et al., 85k:34009
- Yoneyama, Toshiaki See Hara, Tadayuki; et al., 85k:34009

## secondary classifications (34A15)

- Balsor, W. (with Jurkat, W. B.; Luts, D. A.) Characterization of first level formal solutions by means of the growth of their coefficients. 85a:34007
- Baxley, John V. Global existence for nonlinear second order differential equations. 85c:34012
- Izyumova, D. V. The boundedness and stability of solutions of some nonlinear second-order functional-differential equations. (Russian. English and Georgian summaries) 85f:34123
- Jurkat, W. B. See Balsor, W.; et al., 85a:34007



Lutz, D. A. See Balser, W.; et al., 85a:34007

Raspecki, B. On some classes of Volterra differential-integral equations. 85h:45003

### 34A20 Differential equations in the complex domain [See also 30D05.]

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- Qiu, Lian Rong A direct method of operational calculus. I. Research for the solution of second-order linear ordinary differential equations with variable coefficients. 85e:44006
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- Tamba, Tagbino Linear differential systems with partial isometry. (Russian) 85f:34010
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- Kwong, Man Kam Matrix Riccati inequality and oscillation of second-order differential systems. **85j:34060**
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- (with Nayak, S. K.) Nonoscillation of second-order nonhomogeneous differential equations. **85k:34077**
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- Grace, S. R. (with Lalli, B. S.) Asymptotic and oscillatory behavior of solutions of differential equations with deviating arguments. **85c:34094**
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- (with Lalli, B. S.) Oscillation theorems for damped differential equations of even order with deviating arguments. **85k:34173**
- Graef, John R. (with Grammatikopoulos, Myron K.; Kitamura, Yuichi; Kusano, Takasi; Onose, Hiroshi; Spikes, Paul W.) Nonoscillation theorems for functional-differential equations of arbitrary order. **85m:34112**
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- Grammatikopoulos, Myron K. See Graef, John R.; et al., **85m:34112**
- Györi, I. See Arino, O.; et al., **85k:34168**
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- Ladas, G. (with Sficas, Y. G.; Stavroulakis, I. P.) Functional-differential inequalities and equations with oscillating coefficients. **85f:34128**
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- Samokhin, Yu. A. (with Fomin, V. N.) Efficient estimation of the index of exponential growth of the solutions of linear quasistationary differential equations near the boundary of stability. (Russian) **85k:34083**
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- Vinograd, Robert E. An improved estimate in the method of freezing. **85j:34068**
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- Graef, John R. (with Grammatikopoulos, Myron K.; Kitamura, Yuichi; Kusano, Takasi; Onose, Hiroshi; Spikes, Paul W.) Nonoscillation theorems for functional-differential equations of arbitrary order. **85m:34112**
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- Ivanov, Anatoli Fiodorovich Some comparison theorems for second-order differential equations with deviating arguments. (Russian) **85c:34052**
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- Lalli, B. S. See Grace, S. R., **85d:34038**
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- Burton, T. D. On the amplitude decay of strongly nonlinear damped oscillators. 85a:34051
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- Grace, S. R. (with Lalli, B. S.; Yeh, Ché Chih) Oscillation theorems for nonlinear second order differential equations with a nonlinear damping term. 85j:34071
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- Hagedorn, P. Zum Eigenwertproblem diskreter linearer mechanischer Systeme mit schwacher Dämpfung und kleinen gyrokopischen Termen. [On the eigenvalue problem of discrete linear mechanical systems with weak damping and small gyroscopic terms] (Not in MR)
- Hamdan, M. N. See Burton, T. D., 85a:34052
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- Leonov, G. A. (with Chshieva, T. L.; Reitmänn, Volker) Eine Frequenzvariante der Vergleichsmethode von Belych-Nekorkin in der Theorie der Phasensynchronisation. [A frequency variant of the comparison method of Belych-Nekorkin in the theory of phase synchronization] 85e:34033
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- Ponomarev, A. S. Conditions for boundedness of solutions in a system with two degrees of freedom under resonating perturbations. (Russian) 85m:34059
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- Maruyak, A. G. (with Yarmush, Ya. I.) Solution of a multipoint boundary value problem for first-order differential equations with parameters by the method of averaging functional corrections. (Russian) **85k:34007**
- Matysina, E. A. See Matysina, N. V. **85j:34151**
- Matysina, N. V. (with Matysina, E. A.) A variant of the construction of oscillating solutions of a nonlinear problem of Cauchy type. (Russian) **85j:34151**
- Michel, Anthony N. See Miller, Richard K.; et al. **85k:34106**
- Miller, Richard K. (with Michel, Anthony N.; Krens, G. S.) On the stability of limit cycles in nonlinear feedback systems: analysis using describing functions. **85k:34106**
- Milusheva, Svetla D. (with Bainov, D. D.) Justification of partially-multiplicative averaging for a class of functional-differential equations with impulses. **85b:34079**
- See also Bainov, D. D. **85b:45014** and **85c:45013**
- Mitropolskii, Yu. A. (with Khoma, G. P.) ★ Математическое обоснование асимптотических методов нелинейной механики. (Russian) [Mathematical justification of asymptotic methods of nonlinear mechanics] **85e:00032**
- Mossabeh, S. Application of a method of averaging to the study of dithers in nonlinear systems. **85c:93033**
- Nayfeh, Ali Hasan Quenching of primary resonance by a superharmonic resonance. **85a:70047**
- Neimark, Yu. I. See Kogan, M. M.; et al. **85h:62109**
- Okumura, Kohshi (with Yasuda, Hiasahi; Kishima, Akira; Takase, Kengo) Numerical solution for sine-wave oscillator circuits by asymptotic method. **85g:94019**
- Petrovakaya, N. V. (with Prokof'eva, O. V.) Qualitative investigation of an averaged Lorenz system. (Russian) **85i:58077**
- Plotnikov, V. A. (with Zheltikov, V. P.) Averaging in differential inclusions with lag. (Russian) **85g:34065**
- Prokof'eva, O. V. See Petrovakaya, N. V. **85a:58077**
- Rajan, Mahesh (with Junkins, John L.) Perturbation methods based upon varying action integrals. (French and German summaries) **85e:70029**
- Regev, O. See Buchler, J. R. **85c:85003**
- Robinson, Clark Sustained resonance for a nonlinear system with slowly varying coefficients. **85e:70027**
- Ronin, E. I. See Kogan, M. M.; et al. **85h:62109**
- Ryabov, Yu. A. See Grebenikov, E. A. **85j:34003**
- Scheid, Robert E., Jr. The accurate numerical solution of highly oscillatory ordinary differential equations. **85i:65091**
- Smirnova, N. A. Investigations of the problem of periodic optimization by the averaging method. (Russian) **85i:49065**
- Stork, Werner Subharmonic response and synchronisation for the forced van der Pol equation via Cesari's method. **85j:34078**
- Strishkov, V. A. See Lomov, S. A. **85d:34080**
- Takase, Kengo See Okumura, Kohshi; et al. **85g:94019**
- Tapley, Byron D. See Ahmed, A. H. **85f:70045**
- Titulaer, U. M. See Geigenmüller, U.; et al. **85e:83042a** and **85e:83042b**
- (Vasil'eva, A. B.) See Small-parameter methods and their application. **85e:00017**
- Verhulst, F. Invariant manifolds and periodic solutions of three degrees of freedom Hamiltonian systems. **85h:58066**
- (Wadhwa, Ram S.) See Grebenikov, E. A. **85j:34003**
- Walker, Stephen S. (with Connelly, J. Alvin) A new negative resistance oscillator model. **85e:94030**
- Yarmush, Ya. I. See Maruyak, A. G. **85i:34007**
- Yasuda, Hiasahi See Okumura, Kohshi; et al. **85g:94019**
- Zhaurov, Yu. V. Averaging of equations with random operators. (Russian) **85g:60071**
- Zheltikov, V. P. See Plotnikov, V. A. **85g:34065**
- Zlatev, S. G. See Khristova, S. G. **85i:45012**
- All-union school-seminar:
- Small-parameter methods and their application ★ Методы малого параметра и их применение. (Russian) [Small-parameter methods and their application] **85e:00017**
- Minke ★ Методы малого параметра и их применение. (Russian) [Small-parameter methods and their application] **85e:00017**
- Small-parameter methods and their application ★ Методы малого параметра и их применение. (Russian) [Small-parameter methods and their application] **85e:00017**

## 34C30 Manifolds of solutions

- Aulbach, Bernd ★ Continuous and discrete dynamics near manifolds of equilibria. **85g:34040**

- Baškova, S. O. Invariant toroidal sets of singularly perturbed systems of differential equations with impulse action. (Russian. Kazakh summary) **85b:34058**
- Drushkova, T. A. Conditions for the existence of partial algebraic integrals of a differential equation. (Russian) **85j:34084**
- Fridman, E. M. See Strygin, V. V. **85j:34086**
- Irtegov, V. D. Classification of degenerate steady motions. (Russian) **85m:34065**
- Malikov, A. I. Estimates of solutions of nonlinear comparison systems. (Russian) **85j:34085**
- Strygin, V. V. (with Fridman, E. M.) Asymptotics of integral manifolds of singularly perturbed systems of differential equations with delayed argument. (Russian) **85j:34086**
- Zelfman, A. I. The asymptotic behavior of solutions of a direct Kolmogorov system. (Russian) **85h:34064**
- Zubov, I. V. Stability of steady-state regimes of nonlinear control systems. (Russian) **85f:34083**

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- Baškova, S. O. An invariant manifold of singularly perturbed systems. (Ukrainian. Russian summary) **85c:34000**
- Barge, Marce Invariant manifolds and the onset of reversal in the Rikitake two-disk dynamo. **85i:86004**
- Carr, Jack (with Muncaster, Robert G.) The application of centre manifolds to amplitude expansions. I. Ordinary differential equations. **85d:58057a**
- (with Muncaster, Robert G.) The application of centre manifolds to amplitude expansions. II. Infinite-dimensional problems. **85d:58057b**
- Castro, Abel On the existence of a positively invariant manifold for a certain system of differential equations. (Spanish. English summary) **85a:58057**
- Floekers, Dietrich Weakly nonlinear systems and bifurcation of higher-dimensional tori. **85m:58128**
- Fridman, E. M. See Strygin, V. V. **85j:34082**
- Mama, K. Yu. Integral sets of a class of differential-equation systems with impulse action. (Ukrainian. Russian summary) **85b:34047**
- Muncaster, Robert G. See Carr, Jack. **85d:58057a** and **85d:58057b**
- Stoffer, Daniel On the approach of Holmes and Sanders to the Mel'nikov procedure in the method of averaging. (German summary) **85g:34039**
- Strygin, V. V. (with Fridman, E. M.) Asymptotic representation of integral manifolds of singularly perturbed functional-differential equations. (Russian) **85g:34052**

## 34C35 Dynamical systems [See also 54H20, 58Fxx, 70-XX.]

- Bahri, Abbas (with Berestycki, Henri) Forced vibrations of superquadratic Hamiltonian systems. **85g:34041**
- Benci, V. (with Capozzi, A.; Fortunato, D.) On asymptotically quadratic Hamiltonian systems. **85m:34066**
- Berestycki, Henri See Bahri, Abbas. **85g:34041**
- Capozzi, A. See Benci, V.; et al. **85m:34066**
- Cheshankov, B. I. (with Slavkova, M. Ya.) Investigation of canonical systems with resonances of arbitrary rank  $r$  and order  $r-1$ . (Bulgarian. English and Russian summaries) **85j:34087**
- Dong, Zhen Xi On dynamical systems with limiting trajectories. (Chinese) **85d:34051**
- Fortunato, D. See Benci, V.; et al. **85m:34066**
- Kohmoto, M. Dynamical system related to an almost periodic Schrödinger equation. (See **85h:58121**)
- Kopanskii, A. Ya. Conditions for representation of semidynamical systems on the line by means of differential equations. (Russian) **85m:34067**
- Kumar, Anant See Prasad, S. S. **85c:34045**
- Popov, V. M. Triggered systems and the extension problem for gradient systems. **85a:34069**
- Prasad, S. S. (with Kumar, Anant) Stable  $P$  and distal dynamical systems. **85c:34045**
- Roth, E. A. Fast computation of the longterm evolution of a perturbed dynamical system by the stroboscopic method. (See **85i:00016**)
- Slavkova, M. Ya. See Cheshankov, B. I. **85j:34087**
- Wollenberg, L. S. Homogeneous quadratic invariants for one-dimensional classical homogeneous quadratic Hamiltonians: some properties of the auxiliary equation. **85b:34059**

## secondary classifications (34C35)

- Aizu, Ko Time-reversal invariance and linear multistep methods for integrating dynamical systems. **85m:65060**
- Berestycki, Henri Solutions périodiques de systèmes hamiltoniens. [Periodic solutions of Hamiltonian systems] **85a:34058**
- Blank, M. L. Estimate of the rate of decrease of correlations in one-dimensional dynamic systems. (Russian) **85e:58111**
- Bojadsiev, George Population modelling by second order differential systems. (See **85g:93006**)
- Bothe, H. G. Distribution of invariant measures on expanding attractors in the ambient manifold. **85g:58056**
- Broer, H. W. Quasiperiodicity in local bifurcation theory. **85k:58058**
- Bronshtein, I. U. Weak regularity and Green functions of linear extensions of dynamical systems. (Russian) **85h:58147**
- Calogero, F. Integrable dynamical systems and related mathematical results. **85d:58038**
- Capozzi, A. On subquadratic not-autonomous Hamiltonian systems. **85j:58052**
- Carroll, M. M. See Rooney, F. J. **85f:73057**
- de Carvalho, Sonia (with Roussarie, Robert) Some remarks about homoclinic points of second order differential equations. **85i:58085**
- Castro, Abel On the existence of a positively invariant manifold for a certain system of differential equations. (Spanish. English summary) **85a:58057**
- Chen, Guo Wei Characteristic exponents of nontrivial solutions of nonlinear systems. (Chinese. English summary) **85k:34101**

- De Gregorio, S. (with Scoppola, E.; Tirozzi, B.) A rigorous study of periodic orbits by means of a computer. **85c:58092**
- (Demitskaya, V. N.) See Ekeland, Ivar, **85d:58028**
- Doriai, B. Integrability in dynamical systems and the Painlevé property. **85i:58058b**
- Easton, Robert W. Parabolic orbits in the planar three-body problem. **85h:70007**
- Ekeland, Ivar A perturbation theory near convex Hamiltonian systems. **85d:58028**
- Falconer, K. J. Differentiation of the limit mapping in a dynamical system. **85b:58115**
- Farkas, M. Stability of bifurcating orbits in a predator-prey model. (See **85g:93006**)
- Fujisaka, H. See Yamada, Tomoji, **85h:58097**
- Gakhov, I. V. Homomorphisms of multidimensional dynamical systems. (Russian. English summary) **85a:58089**
- A class of set-valued mappings of a metric space. (Russian. English summary) **85j:54030**
- Galayuk, V. A. (with Gorechko, A. N.) General solution of an infinite triangular system of ordinary differential equations. (Russian) **85c:34017**
- Gordeev, A. A. See Petrov, V. V., **85d:93027**
- Gorechko, A. N. See Galayuk, V. A., **85c:34017**
- Grammatico, B. The "weak Painlevé" property and integrability of two-dimensional Hamiltonian systems. **85i:58058a**
- Guckenheimer, John (with Holmes, Philip) ★ Nonlinear oscillations, dynamical systems, and bifurcations of vector fields. **85f:58003**
- Hale, Jack Introduction to dynamic bifurcation. **85h:58018**
- Hayashi, Kiyoshi Periodic solution of classical Hamiltonian systems. **85i:58045**
- Hirsch, Morris W. The dynamical systems approach to differential equations. **85m:58086**
- Hofer, Helmut (with Toland, J. F.) Homoclinic, heteroclinic, and periodic orbits for a class of indefinite Hamiltonian systems. **85j:58123**
- Holmes, Philip See Guckenheimer, John, **85f:58003**
- Hurley, M. (with Martin, Clyde F.) Newton's algorithm and chaotic dynamical systems. **85j:58101**
- Ikegami, Giko On dynamical behavior with jumping of electrical circuits. (Japanese) **85g:58077**
- Iliev, Il. Equivalent systems and the Hamilton-Jacobi theorem for nonholonomic systems. (Bulgarian. English and Russian summaries) **85c:70009**
- Iooss, Gérard Persistence d'un cercle invariant par une application voisine de "l'application temps  $\tau$ " d'un champ de vecteurs intégrable. I. En dehors de la bifurcation de Hopf. (English summary) [Persistence of an invariant circle under a mapping close to the "time  $\tau$  map" of an integrable vector field. I. Outside Hopf bifurcation] **85c:58077a**
- Persistence d'un cercle invariant par une application voisine de "l'application temps  $\tau$ " d'un champ de vecteurs intégrable. II. Voisinage d'une bifurcation de Hopf. Exemples d'applications. (English summary) [Persistence of an invariant circle under a mapping close to the "time  $\tau$  map" of an integrable vector field. II. Neighborhood of a Hopf bifurcation. Applications] **85c:58077b**
- Izé, A. F. On a fixed point index method for the analysis of the asymptotic behavior and boundary value problems of process and semidynamical systems. **85b:58111**
- Knight, Ronald A. A characterization of recurrent motions. **85f:54090**
- Attraction and stability in transformation groups. **85c:54070**
- Fundamental dynamic equations. (Arabic summary) **85g:54038**
- (Korbut, A. N.) See Ekeland, Ivar, **85d:58028**
- Kuř, M. Integrals of motion for the Lorenz system. **85f:58043**
- Leach, P. G. L. A theorem for time-dependent dynamical systems. **85d:70008**
- Ledrappier, F. (with Strelny, J.-M.) A proof of the estimation from below in Pesin's entropy formula. **85f:58070**
- Small-parameter methods and their application Stability of motion of a class of dynamical systems with time-varying coefficients. (Chinese. English summary) **85k:34105**
- Liu, Lin (with Zhang, Sheng Pan) A transformation method of non-Hamiltonian systems and its application. **85c:70015**
- Lubliner, J. On the existence of equations of evolution. **85h:58042**
- Lutsky, M. Isospectral representations of dynamical systems. **85f:58044**
- (Lyapunov, A. N.) See Ekeland, Ivar, **85d:58028**
- Marsden, Jerrold E. See Salam, Fathi M. A.; et al., **85c:58041**
- Martin, Clyde F. See Hurley, M., **85j:58101**
- Martinez, Servet A. Maximal entropy measures in topologically transitive and hyperbolic dynamical systems. **85g:58069**
- Mather, John N. Glancing billiards. **85c:58065**
- Matsuyuk, R. Ya. Existence of a Lagrangian for a nonautonomous system of ordinary differential equations. (Russian) **85g:70020**
- Medved, Milan On codimension three bifurcations of a family of three-dimensional vector fields. **85b:58097**
- Meyer, K. R. Scaling Hamiltonian systems. **85k:58034**
- Mukharlyamov, R. G. Equations of motion of mechanical systems. (Russian) **85d:70009**
- Nasu, Masakazu Constant-to-one and onto global maps of homomorphisms between strongly connected graphs. **85m:58162**
- Olhrot, A. W. General dynamical systems with heredity. **85c:34085**
- Pesin, Ya. B. (with Sinai, Ya. G.) Gibbs measures for partially hyperbolic attractors. **85f:58071**
- Petrov, V. V. (with Gordeev, A. A.) Investigation of discrete dynamical systems on a phase plane. (Russian) **85d:93027**
- Popescu, Ilie Solutions périodiques d'un système d'équations différentielles. [Periodic solutions of a system of differential equations] **85f:34078**
- Popov, V. M. Nonlinear oscillations in triggered systems. **85k:34084**
- Reinfields, Andrejs Homeomorphism of dynamical systems in the neighborhood of a stable invariant manifold. (Russian) **85e:58080**
- Rooney, F. J. (with Carroll, M. M.) Generating functions for plane or axisymmetric isochoric deformations. **85f:73057**
- Roussarie, Robert See de Carvalho, Sonia, **85i:58085**
- Salam, Fathi M. A. (with Marsden, Jerrold E.; Varaiya, Pravin P.) Chaos and Arnold's diffusion in dynamical systems. **85c:58041**
- Salvatore, Addolorato Periodic solution of Hamiltonian systems with a subquadratic potential. (Italian summary) **85m:58076**
- Sarlet, W. Symmetries and the inverse problem of Lagrangian dynamics for linear systems. **85h:70014**
- Scoppola, E. See De Gregorio, S.; et al., **85c:58092**
- Shepeleva, R. P. On the question of instability of canonical equations with  $T$ -periodic coefficients. (Russian) **85f:34098**
- Sinai, Ya. G. See Pesin, Ya. B., **85f:58071**
- Strelny, J.-M. See Ledrappier, F., **85f:58070**
- Tirozzi, B. See De Gregorio, S.; et al., **85c:58092**
- Toland, J. F. See Hofer, Helmut, **85j:58123**
- Tonkov, E. L. See Vasil'ev, V. V., **85k:93017**
- Tudosie, C. A method for determining accelerations from the differential equation of a dynamical system. (Romanian. English summary) **85a:70009**
- Varaiya, Pravin P. See Salam, Fathi M. A.; et al., **85c:58041**
- Vasil'ev, V. V. (with Tonkov, E. L.) A criterion for uniform complete observability of a linear limit-recursive system. (Russian) **85k:93017**
- Yamada, Tomoji (with Fujisaka, H.) Stability theory of synchronized motion in coupled-oscillator systems. II. The mapping approach. **85h:58097**
- (Yanoskaya, E. B.) See Ekeland, Ivar, **85d:58028**
- Yuri, Michiko The existence of an invariant stable foliation and the problem of reducing to a one-dimensional map. **85b:58081**
- Zehnder, E. Periodic solutions of Hamiltonian equations. **85j:34080**
- Zevin, Aleksandr Aronovich Stability of fundamental forced oscillations in essentially nonlinear systems with one degree of freedom. (Russian) **85i:70033**
- Zhang, Sheng Pan See Liu, Lin, **85c:70015**

### 34C40 Equations and systems on manifolds [See mainly 58Fxx, 58Gxx.]

- Ambrosetti, Antonio Recent advances in the study of the existence of periodic orbits of Hamiltonian systems. **85c:34048**
- Golubysnikov, V. P. (with Pestov, L. N.) Trajectories of a dynamical system defined by a one-parameter group of conformal transformations of  $\mathbb{R}^2$ . (Russian) **85f:34084**
- Liu, Zong Ze (with Tian, Jing Huang) ★ On total van der Pol equations. **85c:34049**
- Pestov, L. N. See Golubysnikov, V. P., **85f:34084**
- Tian, Jing Huang See Liu, Zong Ze, **85c:34049**

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- Aranson, S. Kh. (with Grines, V. Z.) Recurrent geodesics without self-intersections on two-dimensional manifolds of negative curvature. (Russian) **85b:53033**
- Chu, Moody T. On the global convergence of the Toda lattice for real normal matrices and its applications to the eigenvalue problem. **85j:58072**
- Dmitrienko, V. T. On the question of being proper, for a class of differentiable operators. (Russian) **85h:47076**
- Erahov, E. K. Typical properties of the behavior of trajectories on a multidimensional torus. (Russian) **85b:58070**
- Grines, V. Z. See Aranson, S. Kh., **85b:53033**
- Kulik, V. L. On the relation between quadratic forms and Green's function of a linear extension of dynamical systems on a torus. (Russian) **85j:58131**
- Motreanu, Dumitru (with Pavel, Nicolae H.) Flot-invariance par rapport aux équations différentielles du second ordre sur une variété. (English summary) [Flow-invariance with respect to second-order differential equations on manifolds] **85f:58020**
- Pavel, Nicolae H. See Motreanu, Dumitru, **85f:58020**
- Pilav, V. A. Distribution of stable and unstable manifolds of hyperbolic systems. (Russian) **85g:58070**
- Samolilenko, A. M. (with Teplinskii, Yu. V.; Tsyanovskii, N. S.) Invariant tori of countable systems of differential equations. (Russian) **85f:34015**
- Sell, George R. Vector fields in the vicinity of a compact invariant manifold. **85b:58117**
- Spirig, Frans Sequence of bifurcations in a three-dimensional system near a critical point. (German summary) **85d:58069**
- Teplinskii, Yu. V. See Samolilenko, A. M.; et al., **85f:34015**
- Tsyanovskii, N. S. See Samolilenko, A. M.; et al., **85f:34015**
- Yuri, Michiko The existence of an invariant stable foliation and the problem of reducing to a one-dimensional map. **85b:58081**

### 34C45 Method of integral manifolds

### secondary classifications (34C45)

- Carr, Jack (with Muncaster, Robert G.) The application of centre manifolds to amplitude expansions. II. Infinite-dimensional problems. **85d:58057b**
- Muncaster, Robert G. See Carr, Jack, **85d:58057b**

### 34C99 None of the above, but in this section

- Matvienko, A. M. See Sharipov, Sh. R., **85i:34024**
- Sharipov, Sh. R. (with Matvienko, A. M.) Global phase portrait of a two-dimensional system of a special type. (Russian) **85i:34024**
- Styusarchuk, V. E. Bounded solutions of linear functional-differential equations with discontinuous operator coefficients. (Russian) **85f:34085**
- Trench, William F. Asymptotic integration of  $y^{(n)} + P(t)y' = f(t)$  under mild integral smallness conditions. **85k:34100**

### secondary classifications (34C99)

- Ishida, Kensai Gain of information and evolutionary stable strategy in hypercyclic organization. **85m:92008**



Makino, Tetu On pseudopoles of Abrikosov equation. 85d:34011

Schecter, Stephen (with Singer, Michael F.) Correction: "Separatrices at singular points of planar vector fields" [Acta Math. 145 (1980), no. 1-2, 47-78; MR 82e:58075]. 85e:58108

Singer, Michael F. See Schecter, Stephen, 85e:58108

### 34Dxx Stability theory [See also 58F10, 93Dxx.]

secondary classifications (34Dxx)

Harris, C. J. (with Valenca, J. M. E.) ★The stability of input-output dynamical systems. 85i:93001

Valenca, J. M. E. See Harris, C. J., 85i:93001

### 34D05 Asymptotic properties; characteristic exponents

Budintsev, Mirko On Wong's conjecture. (Serbo-Croatian summary) 85b:34055

Chen, Guo Wei Characteristic exponents of nontrivial solutions of nonlinear systems. (Chinese. English summary) 85k:34101

Chiu, Kuo Liang On the asymptotic behavior of perturbed linear systems. 85k:34102

Craig, Walter (with Simon, Barry) Subharmonicity of the Lyapunov index. 85f:34086

Goloveshko, V. I. (with Tereshchenko, M. I.) Normal-regular solutions in investigation of the asymptotic behavior of the Cauchy problem for second-order differential equations. (Ukrainian. Russian summary) 85i:34025

Hochstadt, Harry On the width of the instability intervals of the Mathieu equation. 85f:34087

Isobov, N. A. Refinement of bounds for highest exponents in the freezing method. (Russian) 85d:34052

The Emden-Fowler equations with unbounded infinitely continuable solutions. (Russian) 85j:34103

Karai, J. Attractivity theorems for second order nonlinear differential equations. 85k:34104

Krenz, G. S. See Miller, Richard K.; et al., 85k:34106

Kulik, V. L. See Ordynakaya, Z. P., 85b:34060

Masanik, S. A. Some invariants of linear differential systems. (Russian) 85m:34068

Michel, Anthony N. See Miller, Richard K.; et al., 85k:34106

Miller, Richard K. (with Michel, Anthony N.; Krenz, G. S.) On the stability of limit cycles in nonlinear feedback systems: analysis using describing functions. 85k:34106

Momot, I. P. See Samoilenko, A. M., 85j:34089

Naito, Manabu Asymptotic behavior of solutions of second order differential equations with integrable coefficients. 85m:34069

Nguyen Cang Problèmes qualitatifs d'une classe de systèmes aux non-linéarités superposées. [Qualitative problems for a class of systems with superimposed nonlinearities] 85m:34070

Ordynakaya, Z. P. (with Kulik, V. L.) Exponential dichotomy of systems of differential equations. (Russian) 85b:34060

Pettier, G. Solution sets with a single type number. (Russian) 85j:34088a

Continuity of type numbers. (Russian) 85j:34088b

Type numbers of trajectories whose projections by the limit set have a cycle. (Russian) 85j:34088c

Rakhimberdiev, M. I. A typical property of Lyapunov exponents. (Russian) 85a:34070

Samoilenko, A. M. (with Momot, I. P.) Asymptotic stability of states of equilibrium of a power logistic system. (Russian. English summary) 85j:34089

Sergeev, I. N. On the theory of Lyapunov exponents of linear systems of differential equations. (Russian. English summary) 85m:34071

Simon, Barry See Craig, Walter, 85f:34086

Surkov, A. G. Exact lower and upper bounds of the highest and lowest characteristic exponents of a two-dimensional system with bounded perturbations. (Russian) 85c:34050

Sharp upper and lower bounds for characteristic indices of a two-dimensional system with bounded perturbations. (Russian) 85c:34042

Suter, Ruedi Ein kurzer Beweis des Stabilitätskriteriums für kubische Polynome. (English summary) [A short proof of the stability criterion for cubic polynomials] 85k:34107

Tereshchenko, M. I. See Goloveshko, V. I., 85i:34025

Voskresenskii, E. V. On the asymptotic equivalence of systems of differential equations. (Russian) 85k:34108

Xiao, Shuang Fa Necessary and sufficient conditions for global asymptotic stability of the zero solution to a second-order nonlinear differential equation. (Chinese) (Not in MR)

Zheng, Guang En Stability of characteristic exponents for almost periodic linear systems. (Chinese. English summary) 85k:34109

Zubova, A. F. Investigation of the stability of oscillatory systems. (Russian) 85k:34110

secondary classifications (34D05)

Adrianova, L. Ya. The structure of the Persidskii spectrum of a second-order linear system. (Russian) 85e:58118

Aulbach, Bernd Approach to hyperbolic manifolds of stationary solutions. 85f:58061

Becker, Ronald I. Asymptotic expansions of formally selfadjoint differential equations with conditionally integrable coefficients. II. 85a:34076

Bugir, M. K. Tests for stability and boundedness of solutions of second- and third-order equations in Hilbert spaces. (Russian) 85m:34090

Bykov, A. A. Determination of characteristic indices of second-order linear systems with periodic coefficients. (Russian) 85c:34015

Chen, Jing Sen Exponential dichotomies of delay functional differential equations. (Chinese. English summary) 85b:34086

Dong, Jin Zhu Poincaré's type of equations in the study of limit cycles. 85f:34053

Frayland, Jan Lyapunov exponents for multidimensional orbits. 85c:58061

Fujisaka, H. Statistical dynamics generated by fluctuations of local Lyapunov exponents. 85c:58069

Gabuttil, Bruno An existence theorem for a boundary value problem related to that of Falkner and Skan. 85m:34032

Hale, Jack (with Massatt, Paul) Asymptotic behavior of gradient-like systems. 85d:34054

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- Perov, A. I. (with Smagina, T. I.; Khatskevich, V. L.) A variational approach to a problem on periodic solutions. (Russian) 85m:34095
- Pivtorak, N. I. Stable completely solvable boundary value problems for hyperbolic equations in a Hilbert space. (Russian) 85h:34073

### 34Gxx Differential equations in abstract spaces [See also 58D25.]

secondary classifications (34Gxx)

- Pazy, A. ★ Semigroups of linear operators and applications to partial differential equations. 85g:47061

- Ravaglia, Carlo Strong comparison theorems for differential equations in a Hilbert space. (Italian. English summary) **85b:34674**
- Resnikov, A. G. See Lyubashenko, V. V., **85k:34150**
- Rusanov, V. V. (with Karlin, V. A.) An iteration method with fictitious unknowns. (Russian) **85f:34111**
- Sandefur, James T., Jr. Convergence of solutions of a second-order Cauchy problem. **85c:34069**  
See also Goldstein, Jerome A., **85f:34109**
- Semenov, S. M. See Sobolevskii, P. E., **85c:34066** and **85k:35001**
- Shmulevich, S. D. See Kononenko, V. I., **85k:34148** and **85m:34093**
- Sidorov, N. A. Lyapunov's methods in the theory of differential equations with a Volterra operator multiplying the derivative. (Russian) **85j:34130**
- Differential equations with a Volterra operator multiplying the derivative. (Russian) **85j:34131**
- Sil'chenko, Yu. T. A property of the resolvent of a differential operator. (Russian) (See **85k:35001**)
- Smagina, T. I. See Perov, A. I.; et al., **85m:34095**
- Sobolevskii, P. E. (with Semenov, S. M.) A new method of investigation of degenerate hyperbolic equations. (Russian) (See **85k:35001**)  
(with Semenov, S. M.) An approach to the investigation of degenerate hyperbolic equations. (Russian) **85c:34066**
- Sotnichenko, N. A. (with Davidiuk, G. P.) Linear differential equations with an irregular singular point in Banach space. (Russian. English summary) **85j:34132**
- Terreni, Brunello See Acquistapace, Paolo, **85f:34106**
- Tomarelli, Franco Weak solution for an abstract Cauchy problem of parabolic type. **85c:34067**
- Trofimov, V. P. See Zubova, S. P., **85g:34054**
- Venni, Alberto Some properties of the solution of a boundary value problem for an abstract second-order equation. (Italian. English summary) **85j:34133**
- Wong, M. W. On an abstract differential equation and its application to positive eigenvalues of Schrödinger operators. **85m:34096**
- Yagi, Atsushi Differentiability of families of the fractional powers of selfadjoint operators associated with sesquilinear forms. **85b:34069**
- You, Yun Cheng On the generator of the solution semigroup for a linear retarded evolution equation in the space  $M^2$ . (Chinese. English summary) **85c:34068**
- Zaidman, S. Remarks on the well-posed weak Cauchy problem. (Italian summary) **85k:34152**
- Zubova, S. P. (with Trofimov, V. P.) Holomorphic solutions of a differential equation with a parameter that is not solved with respect to the derivative. (Russian) **85g:34054**
- secondary classifications (34G10)
- Da Prato, G. (with Grisvard, P.) On extrapolation spaces. (Italian summary) **85j:46131**
- Di Blasio, Gabriella (with Kunisch, K.; Sinestrari, Eugenio) Retarded abstract equations in Hilbert spaces. **85j:34142**
- Dubois, R.-M. Problèmes mixtes abstraits et principe du maximum parabolique. [Abstract mixed problems and parabolic maximum principle] **85f:35194**
- Favini, Angelo A note on singular and degenerate abstract equations. (Italian summary) **85c:47016**
- Freedman, M. A. Product integrals of continuous resolvents: existence and nonexistence. **85f:47050**
- Greenberg, William (with van der Mee, C. V. M.) Problems in the abstract theory of stationary one-dimensional transport. **85j:47007**
- Grisvard, P. See Da Prato, G., **85j:46131**
- Haraux, A. Asymptotic behavior of trajectories for some nonautonomous, almost periodic processes. **85h:34075**
- Huang, Fa Lun On the theory of asymptotic stability of linear dynamical systems in general Banach spaces. (Chinese) (Not in MR)
- Hughes, Rhonda J. Some consequences of Duhamel's formula for weak solutions of time-dependent Schrödinger equations. **85i:47016**
- Ibragimov, Sh. I. A boundary value problem for a second-order operator-differential equation. (Russian) **85i:34005**
- Kunisch, K. See Di Blasio, Gabriella; et al., **85j:34142**
- Lasiecka, I. (with Triggiani, R.) Regularity of hyperbolic equations under  $L_2(0, T; L_2(\Gamma))$ -Dirichlet boundary terms. **85j:35111**
- Louis, J.-C. (with Wexler, D.) On exact controllability in Hilbert spaces. **85j:93007**
- Lutz, D. A. Über die Konvergenz operatorwertiger Cosinusfunktionen mit gestörtem infinitesimalen Erzeuger. (English summary) [On the convergence of operator-valued cosine functions with perturbed infinitesimal generator] **85a:47046**
- Mazel', M. Kh. See Zabrejko, P. P.; et al., **85k:34059**
- van der Mee, C. V. M. See Greenberg, William, **85j:47007**
- Nasr Ibragim, Ahmed Helmi Muhammad A study of one-dimensional Schrödinger equation with nonlocal potential. **85m:81035**
- Neubrandner, Frank Well-posedness of abstract Cauchy problems. **85k:47084**
- Piskarev, S. I. Estimates for the rate of convergence in semidiscretization of evolution equations. (Russian) **85f:65056**
- Prüss, Jan On the spectrum of  $C_0$ -semigroups. **85f:47044**
- Radyno, Ya. V. ★ Линейные уравнения и борнология. (Russian) [Linear equations and bornology] **85d:46006**
- Sinestrari, Eugenio A noncompact differentiable semigroup arising from an abstract delay equation. **85f:47046**  
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- Tret'yakova, L. G. See Zabrejko, P. P.; et al., **85k:34059**
- Triggiani, R. See Lasiecka, I., **85j:35111**
- Turyn, Lawrence Perturbation of two-point boundary value problems with eigenvalue parameter in the boundary conditions. **85a:34026**
- Veliev, M. A. On the stability of the solution by the Bubnov-Galerkin method of a boundary value problem for certain linear equations with variable coefficients. (Russian. English and Azerbaijani summaries) **85d:65048**

Wexler, D. See Louis, J.-C., **85j:93007**

Zabrejko, P. P. (with Mazel', M. Kh.; Tret'yakova, L. G.) The Green function in the problem on bounded solutions for generalized ordinary differential equations. (Russian. English summary) **85k:34059**

### 34G20 Nonlinear equations [See also 47Hxx.]

- Altman, Mieczyslaw A general local existence theorem for quasilinear evolution equations in nonreflexive Banach spaces. **85b:34070**  
A new approach to quasilinear evolution equations in nonreflexive Banach spaces. **85f:34112**
- Arrate Pena, Manuel (with Palencia, C.) Local existence and uniqueness for ordinary differential equations in Banach spaces. (Spanish. English summary) **85j:34134**
- Das, Kalyan (with Devasahayam, M. Paul) Quasilinear evolution equations and monotone method for infinite systems of nonlinear boundary value problems. **85m:34097**
- Dashleba, S. S. Dissipative differential equations in a Banach space. (Russian) **85j:34135**
- De Blasi, F. S. (with Myjak, Józef) Generic flows generated by continuous vector fields in Banach spaces. **85d:34066**  
(with Myjak, Józef) Orlicz type category results for differential equations in Banach spaces. **85f:34113**
- Devasahayam, M. Paul See Das, Kalyan, **85m:34097**
- Dubois, Jacques (with Morales, P.) Structure de l'ensemble des solutions du problème de Cauchy sous les conditions de Carathéodory. [Structure of the set of solutions of the Cauchy problem under Carathéodory conditions] **85d:34067**
- Emmanuele, Giovanni A remark on some uniqueness theorems for O.D.E.s in closed sets. **85f:34114**
- Erbe, Lynn H. (with Mysore, S.) Comparison theorems for Riccati differential equations in a  $B^*$ -algebra. **85g:34055**
- Ermakov, S. M. See Wagner, Wolfgang, **85f:34126**
- Puruya, Kiyoko Analyticity of solutions of quasilinear evolution equations. II. **85j:34136**
- Gafsan, I. V. Orbit properties of completely integrable equation. **85a:34085**
- Gashimov, É. T. Justification of the correctness of the finite element method for a nonlinear equation of Schrödinger type. (Russian. English and Azerbaijani summaries) **85f:34115**
- Graff, Richard A. The existence of local semiflows for nonlinear differential equations in Banach spaces, and applications to partial differential equations. **85a:34066**
- Hamad, G. See Sobel', M., **85j:34140**
- Haraux, A. Asymptotic behavior of trajectories for some nonautonomous, almost periodic processes. **85h:34075**
- Herod, J. V. Series solutions for nonlinear Boltzmann equations. **85k:34153**
- Hilgers, John W. (with Spahn, Robert J.) A perturbation method for solving a quadratic evolution equation. **85m:34098**
- Hirano, Norimichi Local existence theorems for nonlinear differential equations. **85b:34071**
- Hu, Shou Chuan Ordinary differential equations involving perturbations in Banach spaces. **85a:34087**
- Ibragimov, Sh. I. The weak solution of a first-order differential equation in a Hilbert space. (Russian) **85i:34035**
- Kharan, M. I. See Krein, S. G., **85f:34116**
- Kielhöfer, Hansjörg (with Lauterbach, Reiner) On the principle of reduced stability. **85c:34070**
- Kořmna, E. S. Solvability of the Cauchy problem for an almost linear hyperbolic equation with functional and algebraic nonlinearities. (Russian. English summary) **85h:34076**
- Krein, S. G. (with Khazan, M. I.) Differential equations in a Banach space. (Russian) **85f:34116**
- Kuttler, Kenneth Implicit evolution equations. **85c:34069**
- Kuzyk, A. M. See Makarov, Vladimir Leonidovich, **85d:34068**
- Laborde, Patrick Étude d'un problème d'évolution non monotone. (English summary) [Study of a problem of nonmonotone evolution] **85j:34137**
- Lakeev, A. V. Existence of vector functions of comparison with equality. (Russian) **85m:34099**
- Lakshmikantham, V. (with Leela, S.) On the method of upper and lower solutions in abstract cones. **85m:34100**
- Lauterbach, Reiner See Kielhöfer, Hansjörg, **85c:34070**
- Leela, S. See Lakshmikantham, V., **85m:34100**
- Lunardi, Alessandra Abstract quasilinear parabolic equations. **85g:34056**
- Makarov, Vladimir Leonidovich (with Kuzyk, A. M.) The rate of convergence of the summary approximation method for generalized solutions. (Russian. English summary) **85d:34068**
- Malik, Mohammad Abdul On asymptotic decay of weak solutions of abstract differential inequality. **85k:34154**
- Marcati, Pierangelo Stability for second order abstract evolution equations. **85k:34155**
- Marinov, Corneliu Qualitative properties of  $IP$ -solutions of infinite differential systems via dissipativity. **85m:34101**
- Morales, P. See Dubois, Jacques, **85d:34067**
- Myjak, Józef See De Blasi, F. S., **85d:34066** and **85f:34113**
- Mysore, S. See Erbe, Lynn H., **85g:34055**
- Neustupa, Jiří The linearized uniform asymptotic stability of evolution differential equations. **85f:34117**
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- Palencia, C. See Arrate Pena, Manuel, **85j:34134**
- Pan, Ji Xun The homeomorphism theorem and periodic solutions of nonlinear time-varying systems. (Chinese. English summary) **85m:34102**
- Paška, E. E. An example of a first-order differential equation in a Hilbert space without continuous dependence of the solution on the initial condition. (Russian) **85c:34070**  
Conditions for solvability of a first-order Cauchy problem in Banach space. (Russian) **85j:34138**
- Pazy, A. Initial value problems for nonlinear differential equations in Banach spaces. (French summary) **85c:34071**



- Prilepa, A. I. (with Oriovikil, D. G.) Inverse problems for semilinear evolution equations. (Russian) **85b:34156**
- Pulgar, Milan Solutions of abstract hyperbolic equations by Rothe method. (Russian and Czech summaries) **85d:34089**
- Ramakutty, P. An extension of a uniqueness theorem of J. A. Goldstein. **85f:34118**
- Rogoshin, S. V. The normal forms of nonautonomous systems. (Russian) **85i:34036**
- Romanova, O. A. (with Sidorov, N. A.) The role of Schmidt's lemma and pseudoinverse operators in the theory of differential equations with degeneration. (Russian) **85b:34072**
- See also Sidorov, N. A., **85a:34086**
- Raspecki, B. On the equation  $y' = f(t, y)$  in Banach spaces. **85c:34071**
- Sager, Herbert C. Periodic solutions of time-dependent, semilinear evolution equations of compact type. **85m:34103**
- Schechter, Eric Necessary and sufficient conditions for convergence of temporally irregular evolutions. **85b:34077**
- Sidorov, N. A. (with Romanova, O. A.) Application of certain results of branching theory in the solution of degenerate differential equations. (Russian) **85a:34068**
- A class of degenerate differential equations with convergence. (Russian) **85j:34139**
- See also Romanova, O. A., **85b:34072**
- Slyusarchuk, V. E. Some additions to the theory of stability of systems in the first approximation. (Russian) **85a:34089**
- Smiley, Michael W. A weak formulation of the 2-point boundary value problem for hyperbolic equations. **85b:34073**
- Sobelih, M. (with Hamad, G.) The existence and uniqueness of the solution of a boundary value problem for a vector differential equation of  $n$ th order in Banach space. **85j:34140**
- Spahn, Robert J. See Hilgers, John W., **85m:34098**
- Stufla, Stanislaw On the existence of solutions of differential equations in Banach spaces. (Russian summary) **85f:34119**
- Tadzhuri, M. Operator-differential equations in Beurling spaces. (Russian. English summary) **85k:34157**
- Wagner, Wolfgang (with Ermakov, S. M.) Representation of solutions of nonlinear equations in the form of an integral on the set of trajectories of a random process. (Russian) **85f:34120**
- Wang, Alan P. Solutions of a dissipative diffusion equation in a Hilbert space. **85b:34074**
- Yamamoto, Sadaaki On a functional-differential equation in locally convex spaces. **85b:34078**
- Zadorozhnyi, V. G. Nonlocal solutions of  $V$ -dissipative differential equations. (Russian) **85a:34090**
- Zaidman, S. Solutions of abstract differential equations with minimal uniform norm. **85c:34072**
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- Abdullin, R. Z. Practical stability in problems of automatic control. (Russian) **85b:34056**
- Ahmed, N. U. Properties of relaxed trajectories for a class of nonlinear evolution equations on a Banach space. **85h:49012**
- Alfieri, Raju N. A test for the integrability of nonlinear evolution equations. **85e:58058**
- Altman, Mieczyslaw Nonlinear equations of evolution and convex approximate linearization in Banach spaces. I, II. **85m:47064**
- Quasilinear evolution equations and convex approximate linearization in Banach spaces. **85m:47065**
- Nonlinear evolution equations and smoothing operators in Banach spaces. **85m:47066**
- Nonlinear equations of evolution in Banach spaces. **85m:47067**
- Angelov, V. G. (with Bainov, D. D.) Existence and uniqueness of the global solution of an integro-differential equation of elasticity theory. (Bulgarian. English and Russian summaries) **85j:45020**
- Babin, A. V. (with Vishik, M. I.) Regular attractors of semigroups and evolution equations. **85g:58058**
- Bainov, D. D. See Angelov, V. G., **85j:45020**
- Bailey, N. W. (with Weinacht, Richard J.) Bifurcation of periodic solutions for wave equations with scalar nonlinearities. **85k:35013**
- Bénilan, Philippe (with Díaz Díaz, Jesús Idefonso) Comparison of solutions of nonlinear evolution problems with different nonlinear terms. **85h:35113**
- Bressan, Alberto Solutions of lower semicontinuous differential inclusions on closed sets. (Italian summary) **85f:34024**
- Brill, Ludger On the existence theory for nonlinear Schrödinger and wave equations without Lipschitz-estimates. **85k:35036**
- Buoni, G. A nonlinear model of nuclear reactor evolution with poisoning effects. (Italian summary) **85d:82122**
- Chow, P. L. (with Menaldi, J.-L.) Method of regularization for second-order stochastic evolution equations. **85j:35200**
- Colombeau, J.-F. (with Paques, Otilia Wiermann) Finite-difference partial differential equations in normed and locally convex spaces. **85f:46084**
- Constantin, P. (with Foias, C.; Manley, O. P.; Temam, Roger) Connexion entre la théorie mathématique des équations de Navier-Stokes et la théorie conventionnelle de la turbulence. (English summary) [Connection between the mathematical theory of the Navier-Stokes equations and the conventional theory of turbulence] **85c:76043**
- De Biasi, F. S. (with Myjak, Józef) On the nonexistence of solutions for random differential equations in Banach spaces. **85c:34065**
- De Giorgi, Emilio (with Marino, Antonio; Tosques, Mario)  $(p, q)$ -convex functions. (Italian. English summary) **85h:49029**
- Díaz Díaz, Jesús Idefonso See Bénilan, Philippe, **85h:35113**
- Flandoli, Franco Global existence for a Riccati equation arising in a boundary control problem for distributed parameters. **85d:49006**
- Riccati equation arising in a stochastic optimal control problem with boundary control. (Italian summary) **85a:93165**
- Foias, C. See Constantin, P.; et al., **85c:76043**
- Fursov, V. Z. On the question of the solvability of the Cauchy problem for equations of the form  $u_t = f(t, z, u) + A(u)$ . (Russian) (See **85d:35008**)
- Galaktionov, V. A. Globally unsolvable Cauchy problems for quasilinear parabolic equations. (Russian) **85c:35043**
- Greenberg, William (with van der Mee, C. V. M.) An abstract approach to evaporation models in rarefied gas dynamics. (Italian summary) **85j:76030**
- Grimmer, R. C. (with Zeman, Marvin) Wave propagation for linear integro-differential equations in Banach space. **85j:45032**
- Ha, Ki Sik Multiplicative perturbation of  $m$ -accretive operators and evolution equations in  $L^\infty(\Omega)$ . **85c:47074**
- Hale, Jack (with Massatt, Paul) Asymptotic behavior of gradient-like systems. **85d:34054**
- Dynamics in parabolic equations—an example. **85h:35034**
- Ichikawa, Akira Equivalence of  $L_p$  stability and exponential stability for a class of nonlinear semigroups. **85h:47074**
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- Kačur, Josef On a degenerate parabolic boundary value problem. **85g:35073**
- Application of Rothe's method to perturbed linear hyperbolic equations and variational inequalities. **85k:35149**
- Kartatso, A. G. (with Parrott, M. E.) Global solutions of functional evolution equations involving locally defined Lipschitzian perturbations. **85g:34066**
- Kholina, G. G. One-parameter subgroups of differentiable locally convex group chunks. (Russian) **85c:46041**
- Kirchgässner, Klaus Homoclinic bifurcation of perturbed reversible systems. **85i:58090**
- Knight, Ronald A. The center of a transformation group. **85a:54042**
- Kobayashi, Yoshiharu See Kobayasi, Kazuo; et al., **85h:47073**
- Kobayasi, Kazuo (with Kobayashi, Yoshiharu; Oharu, Shinnosuke) Nonlinear evolution operators in Banach spaces. **85h:47073**
- Kurawell, Jaroslav (with Jarník, Jiří) On regularization of right-hand sides of differential relations. **85i:34003**
- Manley, O. P. See Constantin, P.; et al., **85c:76043**
- Marino, Antonio See De Giorgi, Emilio; et al., **85h:49029**
- Massatt, Paul Limiting behavior for strongly damped nonlinear wave equations. **85d:47063**
- See also Hale, Jack, **85d:34054**
- Masuda, Kyūya Analytic solutions of some nonlinear diffusion equations. **85k:35113**
- van der Mee, C. V. M. See Greenberg, William, **85j:76030**
- Menaldi, J.-L. See Chow, P. L., **85j:35200**
- Miyadera, Isao Some recent topics on nonlinear semigroups. **85f:47070**
- Mukhsinov, M. A. Existence of solutions of differential inclusions in the presence of phase constraints. (Russian) **85g:34015**
- Myjak, Józef Orlicz type category theorems for functional and differential equations. **85j:47078**
- See also De Biasi, F. S., **85c:34065**
- Oharu, Shinnosuke See Kobayasi, Kazuo; et al., **85h:47073**
- Ótani, Mitsuharu Nonmonotone perturbations for nonlinear parabolic equations associated with subdifferential operators, periodic problems. **85j:47066**
- Paques, Otilia Wiermann See Colombeau, J.-F., **85f:46084**
- Parrott, M. E. See Kartatso, A. G., **85g:34066**
- Pavel, Nicolas H. Semilinear equations with dissipative time-dependent domain perturbations. **85b:47067**
- Perri, Emilia On a characterization of reflexive Banach spaces. **85c:46008**
- Rabstyn, Seymour On the Cauchy problem for the coupled Schrödinger-Klein-Gordon equations in one space dimension. **85j:35177**
- Reich, Simeon Nonlinear semigroups, accretive operators, and applications. **85c:47060**
- Renardy, Michael Local existence theorems for the first and second initial-boundary value problems for a weakly non-Newtonian fluid. **85c:76006**
- Schechter, Eric Perturbations of regularizing maximal monotone operators. **85k:47110**
- Correction to: "Perturbations of regularizing maximal monotone operators" [Israel J. Math. **43** (1982), no. 1, 49–61; MR **85k:47110**] and a note on injectiveness. **85k:47111**
- Sharp convergence rates for nonlinear product formulas. **85i:85074**
- Showalter, R. E. A singular quasilinear diffusion equation in  $L^1$ . **85k:35122**
- Song, Ch'ang Ho Approximation of a hyperbolic variational inequality. (Korean. English summary) **85g:49037**
- Tarkhov, D. A. Rectification of integral curves of a system of differential equations on an infinite-dimensional torus. (Russian. English summary) **85j:34075**
- Temam, Roger See Constantin, P.; et al., **85c:76043**
- Tosques, Mario See De Giorgi, Emilio; et al., **85h:49029**
- Turnici, M. Differential Lipschitzianess tests on abstract quasimetric spaces. **85c:54037**
- Villella-Bressan, Rosanna (with Webb, Glenn F.) Nonautonomous functional equations and nonlinear evolution operators. (Italian summary) **85m:47069**
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- Weinacht, Richard J. See Bailey, N. W., **85k:35013**
- Williamson, F. Approximation methods for multivalued differential equations in Hilbert spaces. **85k:34022**
- You, Yun Cheng Optimal control for linear system with quadratic indefinite criterion on Hilbert spaces. **85c:49006**
- Zeman, Marvin See Grimmer, R. C., **85j:45032**
- Zykin, P. N. On the Kuznetsov-Malgrange theorem. (Russian) **85c:58096**

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Castaing, Charles Sur une nouvelle classe d'équation d'évolution dans les espaces de Hilbert. [On a new class of evolution equation in Hilbert spaces] **85j:34141**

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- Babin, A. V. (with Vishik, M. I.) Attractors of parabolic equations and the Navier-Stokes system and estimation of their dimension. (Russian) 85m:35033  
 Bardaro, Carlo (with Pucci, Patrizia) Some contributions to the theory of multivalued differential equations. 85k:34019  
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 Saei, Y. A. Geometrical properties of cones and the comparison of solutions of differential equations. 85b:47062  
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### 34H05 Control problems [See also 49-XX, 93-XX.]

- Aubakirov, D. A. On the closure problem. (Russian) 85m:34104  
 Bogdan, Victor M. Existence and uniqueness of solutions to nonlinear-operator-differential equations generalizing dynamical systems of automatic spaceship navigation. 85e:34073  
 Maïskanov, S. Zh. Absolute instability of the program manifold of indirect control systems. (Russian) 85d:34070  
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- Alaigaliev, S. A. (with Murzabekov, Z. N.) On a reconstruction problem. (Russian) 85e:93024  
 Ardema, Mark D. Solution algorithms for nonlinear singularly perturbed optimal control problems. 85b:49035  
 Bobyl'ev, N. A. (with Krasnosel'skii, M. A.) Approximate construction of self-oscillatory modes in automatic control systems. (Russian) 85h:93038  
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 Flandoli, Franco A Riccati equation arising in a boundary control problem for distributed parameters. (Italian summary) 85b:93030  
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 Fossard, A. J. Systèmes linéaires à deux échelles de temps. [Linear systems with two time scales] 85k:93035  
 Fuchs, Erich New necessary and sufficient conditions for degeneracy of neutral-type differential-difference equations. 85m:34105  
 Gorokhovik, V. V. Necessary conditions for second-order optimality in problems of control with a vector performance index. (Russian) 85g:49023  
 He, Jian Xun Practical stability of discontinuous systems with external perturbations. (Chinese. English summary) 85j:34090  
 Ivanov, A. G. Effective conditions for controllability of a linear nonstationary system. (Russian) 85k:93011  
 Kilmer, W. (with Kroll, W.) Riccati equation solution for controllers with continuous delays. 85e:49029  
 Kokotović, P. V. Perturbations singulières en contrôle optimal. [Singular perturbations in optimal control theory] 85k:49055  
 Kostousov, V. B. The structure of impulse-sliding modes under perturbations of measure type. I. (Russian) 85i:49014a  
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 Kroll, W. See Kilmer, W., 85e:49029  
 Kwong, R. H. Characterization of kernel functions associated with operator algebraic Riccati equations for linear delay systems. 85b:49012  
 Leela, S. Large-scale systems, cone-valued Lyapunov functions and quasisolutions. (See 85e:34003)  
 Louis, J.-C. (with Wexler, D.) On exact controllability in Hilbert spaces. 85j:93007  
 Minyuk, S. A. On the theory of control of linear systems with lag. (Russian) 85c:93020  
 Murzabekov, Z. N. See Alaigaliev, S. A., 85e:93024  
 Nabivach, V. E. See Udilov, V. V.; et al., 85g:65051  
 Nefedov, S. A. On the theory of controllability of systems with distributed parameters. (Russian) 85b:93010  
 Owens, D. H. (with Chotai, A.) On eigenvalues, eigenvectors and singular values in robust stability analysis. 85g:93042  
 Salamon, D. ★ Control and observation of neutral systems. 85e:93002  
 Turchina, O. V. See Udilov, V. V.; et al., 85g:65051  
 Udilov, V. V. (with Nabivach, V. E.; Turchina, O. V.) The method of block-diagonal decomposition of matrices with parameters (D-method) and its application. (Russian) 85g:65051  
 Vidal, O. (with Breteaudau, F.) Vibrational stabilization of autonomous quadratic systems. 85d:93035  
 Wexler, D. See Louis, J.-C., 85j:93007  
 Xu, Ke Kang Suboptimal regulators for linear systems with slow and fast modes. (Chinese. English summary) 85a:49034  
 Yosida, Setusō An optimal control problem of the prey-predator system. 85h:92047  
 You, Yun Cheng Optimal control for linear system with quadratic indefinite criterion on Hilbert spaces. 85e:49006

Small-parameter methods and their application Stability of motion of a class of dynamical systems with time-varying coefficients. (Chinese. English summary) 85k:34105

secondary classifications (34H05)

- Sinha, A. S. C. Solution for certain nonlinear functional differential equations arising from articular cartilage. (Not in MR)

### 34Kxx Functional-differential and differential-difference equations, with or without deviating (or retarded) arguments

secondary classifications (34Kxx)

- Myjak, Josef Orlics type category theorems for functional and differential equations. 85g:47076

### 34K05 General theory

- Akhmerov, R. R. Existence and stability of bounded solutions of functional-differential equations of neutral type with small lag. (Russian) 85k:34158  
 Angelov, V. G. (with Bainov, D. D.) On the functional-differential equations with "maximums". 85k:34159  
 Bainov, D. D. See Angelov, V. G., 85k:34159  
 Barasas, M. On equivalence relations for linear differential-difference systems. 85h:34079  
 Beresanskii, L. M. A linear functional-differential equation. Continuous dependence on parameters. (Russian) 85g:34057  
 Bulatov, V. I. Coalescing of solutions of systems with deviating argument. (Russian) 85d:34071  
 Buslowics, M. On the computation of a characteristic quasipolynomial from the state equations for the multidimensional time-lags system. 85e:34074  
 Cooke, Kenneth L. (with Wiener, Joseph) Distributional and analytic solutions of functional-differential equations. 85c:34072  
 (with Wiener, Joseph) Retarded differential equations with piecewise constant delays. 85d:34072  
 Di Blasio, Gabriella (with Kunisch, K.; Sinestrari, Eugenio) Retarded abstract equations in Hilbert spaces. 85j:34142  
 Dochev, Docho T. (with Ivanov, Ivan G.) Existence and continuation of the solutions of some functional equations. (Bulgarian summary) 85d:34073  
 Driver, R. D. A mixed neutral system. 85k:34160  
 Eder, Einar The functional-differential equation  $x'(t) = x(x(t))$ . 85i:34037  
 Fuchs, Erich New necessary and sufficient conditions for degeneracy of neutral-type differential-difference equations. 85m:34105  
 Gao, Guo Zhu The theorem of the global existence and uniqueness of the solutions for a class of functional equations of neutral type. (Chinese. English summary) 85k:34161  
 Hagemann, Thomas (with Naito, Toshiaki) Functional-differential equations with infinite delay on the space  $C_\gamma$ . 85a:34091  
 Hamedani, G. G. On the existence and uniqueness of solutions of certain functional-differential equations. 85k:34162  
 Some global existence theorems for the solutions of functional-differential equations. 85f:34122  
 Ivanov, Ivan G. See Dochev, Docho T., 85d:34073  
 Izyumova, D. V. The boundedness and stability of solutions of some nonlinear second-order functional-differential equations. (Russian. English and Georgian summaries) 85f:34123  
 Kallinowski, J. Differential equations with iterates of unknown function. (See 85d:34002)  
 On the monotonicity of solutions of certain types of functional-differential equations. (Russian and Czech summaries) 85k:34163  
 Kečkić, Jovan D. A differential-difference equation. 85a:34092  
 Kizielewicz, Michał Generalized functional-differential equations of neutral type. 85e:34075  
 Some generic properties of functional-differential equations of neutral type. 85f:34124  
 Kitaeva, L. N. See Ved', Yu. A., 85e:34078  
 Kunisch, K. See Di Blasio, Gabriella; et al., 85j:34142  
 Magomedov, A. R. Investigation of solutions of differential equations with maxima for problems with control. (Russian. English and Azerbaijani summaries) 85f:34125  
 Naito, Toshiaki A modified form of the variation-of-constants formula for equations with infinite delay. 85m:34106  
 See also Hagemann, Thomas, 85a:34091  
 Norkin, S. B. Two-sided solutions of a linear system with asymptotically constant coefficients and lag. (Russian) 85b:34075  
 Ntouyas, S. K. (with Sficas, Y. G.) On the asymptotic behavior of neutral functional-differential equations. 85f:34126  
 Ohta, Yuzo (with Siljak, D. D.) An inclusion principle for hereditary systems. 85j:34143  
 Parhi, N. On the existence and stability of solutions of a class of neutral functional-differential equations. 85a:34093  
 On the existence and continuous dependence of solutions of a class of neutral functional-differential equations. 85c:34073  
 Pelich, Günther H. A kind of "history space" for retarded functional-differential equations and representation of solutions. 85c:34074  
 Pelyukh, G. P. General solution of a class of linear functional-differential equations with several deviations of the argument. (Russian) 85a:34094  
 Rodkina, A. E. An implicit function theorem and the solution of equations of neutral type. (Russian) 85b:34076  
 Rsepecki, B. On some functional-differential equations. (Serbo-Croatian summary) 85m:34107  
 Seifert, George On Carathéodory conditions for functional-differential equations with infinite delays. 85c:34076  
 Sficas, Y. G. See Ntouyas, S. K., 85f:34126

- Shah, Swarupchand M. (with Wiener, Joseph) Advanced differential equations with piecewise constant argument deviations. 85c:34077
- Shin, Jong-Son Kamke's theorem and the dependence of solutions for delay differential equations. 85m:34106
- Šitjak, D. D. See Ohta, Yuso, 85j:34143
- Sinestrari, Eugenio See Di Blasio, Gabriella; et al., 85j:34142
- Styusarchuk, V. E. Solvability of functional and functional-differential equations in a space of bounded functions on the line. (Russian) 85i:34038
- Staffans, Olof J. A neutral FDE with stable  $D$ -operator is retarded. 85j:34144
- Takano, Katsuo On solution of  $z'(x) = (\nu - 1)f(x) - \sum_{i=1}^m \lambda_i f(x - p_i) - \sum_{j=1}^n \mu_j f(x + q_j)$ . 85k:34164
- Ungar, Abraham Addition theorems for solutions to linear homogeneous constant coefficient ordinary differential equations. 85m:34109
- Ved', Yu. A. (with Kitaeva, L. N.) The limit Cauchy problem for differential systems with deviating argument of neutral type. (Russian) 85c:34078
- Wiener, Joseph Differential equations with piecewise constant delays. (See 85c:34003)
- See also Cooke, Kenneth L., 85c:34072; 85d:34072 and Shah, Swarupchand M., 85c:34077

## secondary classifications (34K05)

- Arndt, Herbert Numerical solution of retarded initial value problems: local and global error and stepsize control. 85b:65142
- Banks, H. T. (with Rosen, I. Gary) Spline approximations for linear nonautonomous delay systems. 85b:65056
- Diotko, Tadeusz On some applications of vector fields to differential equations with deviated argument. 85d:34079
- Gilbikh, Yu. E. Equations with discrete delay on nonlinear manifolds. (Russian) 85a:58085
- Kappel, F. (with Kunisch, K.) Approximation of the state of infinite delay and Volterra-type equations. 85b:65118
- Kisilewicz, Michał (with Rybiński, L.) Generalized fixed point theorem. 85i:47064
- Kunisch, K. See Kappel, F., 85b:65118
- Kwapień, M. (with Turo, J.) Existence and uniqueness of solution for some integral-functional equation. 85c:45006
- Matalytskii, M. A. A method of solution of a differential-difference equation arising in queueing theory. (Russian. English summary) 85j:60180
- Nowicka, Krystyna On the existence of solutions for some integral-functional equation. 85k:45005
- Palanisamy, K. R. See Prasad Rao, Ganti, 85c:94005
- Prasad Rao, Ganti (with Palanisamy, K. R.) Analysis of time-delay systems via Walsh functions. 85c:94005
- Ronto, N. I. Convergence of the trigonometric collocation method for differential equations of neutral type with deviating argument. (Russian. English summary) 85g:65096
- Rosen, I. Gary See Banks, H. T., 85b:65056
- Rybiński, L. See Kisilewicz, Michał, 85i:47064
- Rzepecki, B. On some classes of Volterra differential-integral equations. 85b:45003
- Shah, Swarupchand M. (with Wiener, Joseph) Distributional and entire solutions of ordinary differential and functional-differential equations. 85c:34010
- Turo, J. See Kwapień, M., 85c:45006
- Wiener, Joseph See Shah, Swarupchand M., 85c:34010
- Zhdanov, V. I. Finite-parameter families of solutions of the two-body problem in dynamics with lag. (Russian. English summary) 85c:78006
- Zheng, Zu Xiu Some development and applications of functional-differential equations. (Chinese) 85m:34006

## 34K10 Boundary value problems

- Akhiev, S. S. Fundamental solutions of functional-differential equations and their representations. (Russian) 85j:34145
- Bainov, D. D. See Kasakova, N. G., 85c:34079
- Brodovskii, V. G. A boundary value problem for linear functional-differential equations. (Russian. Kazakh summary) 85m:34110
- Demoshinskiĭ, A. I. Extension of the Sturm theorem to equations with retarded argument. (Russian) 85g:34058
- Grace, S. R. (with Lalli, B. S.) Oscillation of solutions of damped nonlinear second order functional-differential equation. 85b:34080
- Kasakova, N. G. (with Bainov, D. D.) A boundary value problem for functional-differential equations of neutral type. (Russian) 85c:34079
- Ladas, G. (with Sficas, Y. G.; Stavroulakis, I. P.) Necessary and sufficient conditions for oscillations of higher order delay differential equations. 85j:34146
- Lalli, B. S. See Grace, S. R., 85b:34080
- Mokeichev, V. S. See Semínova, V. N., 85a:34095
- Novrusov, G. M. Some approximate methods of solution of the generalized Cauchy problem for systems of integro-differential equations. (Russian) 85k:34165
- Ntouyas, S. K. See Sficas, Y. G., 85a:34096 and 85d:34074
- Seldov, Z. B. A boundary value problem for differential equations with retarded argument. (Russian) 85k:34166
- Semínova, V. N. (with Mokeichev, V. S.) An approach to the solution of a two-point boundary value problem for a system of first-order differential equations with linear deviation of the argument. (Russian) 85a:34095
- Sficas, Y. G. (with Ntouyas, S. K.) A boundary value problem for functional-differential equations of neutral type. 85a:34096
- (with Ntouyas, S. K.) A two-point boundary value problem for neutral functional-differential equations. 85d:34074
- See also Ladas, G.; et al., 85j:34146
- Stavroulakis, I. P. See Ladas, G.; et al., 85j:34146
- Zverkina, T. S. Solution of a boundary value problem for equations of neutral type with small deviation of the argument. (Russian) 85j:34147

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- Bellen, Alfredo Monotone methods for periodic solutions of second order scalar functional-differential equations. 85b:65157
- Diotko, Tadeusz On some applications of vector fields to differential equations with deviated argument. 85d:34079
- Fodchuk, V. I. (with Kholmatov, A.) Polynomial solutions of a boundary value problem for second-order differential-difference equations. (Russian) 85c:34093
- Fricke, A. Ein isoperimetrisches Problem im  $\mathbb{R}^3$ . (English and Russian summaries) [An isoperimetric problem in  $\mathbb{R}^3$ ] 85c:49013
- Kholmatov, A. See Fodchuk, V. I., 85c:34093
- Lyakhovets, S. N. See Minyuk, S. A., 85k:93013
- Minyuk, S. A. (with Lyakhovets, S. N.) A boundary value problem for linear differential-difference equations. (Russian) 85k:93013
- Singh, Bhagat Minimal existence of nonoscillatory solutions in functional-differential equations with deviating arguments. 85j:34062

## 34K15 Qualitative theory

- Angelov, V. G. (with Bainov, D. D.) Positive absolutely continuous solutions of neutral functional-differential equations. 85k:34167
- Angelstorf, N. Periodic solutions of  $u'(t) = -f(u(t-1))$ : multiplicity results and small period solutions. 85c:34080
- Arino, O. (with Seguer, P.) Quelques résultats de comportement des solutions d'une classe d'équations différentielles à argument retardé. [Some results on the behavior of solutions of a class of differential equations with delayed argument] 85j:34148
- (with Györi, I.; Jawhari, A.) Oscillation criteria in delay equations. 85k:34168
- Arola, M. A. (with Bainov, D. D.) Periodic solutions of differential-difference systems of neutral type with impulse action. (Russian) 85c:34127
- Bainov, D. D. (with Khristova, S. G.) On the existence of an invariant surface for a system of differential equations with deviating argument. 85k:34170
- See also Milusheva, Svetla D., 85b:34079; Arola, M. A., 85c:34127; Myshkis, A. D.; et al., 85g:34084 and Angelov, V. G., 85k:34167
- Bellen, Alfredo (with Zennaro, Marino) Determining periodic solutions of ordinary and delay differential equations and inequalities. (Italian. English summary) 85g:34059
- Cañada, A. (with Martínez-Amores, P.) Periodic solutions of neutral functional-differential equations. 85c:34075
- Casal, Alfonso (with Freedman, Marvin I.) The Poincaré-Lindstedt method for differential equations with delay. (Spanish) 85j:34149
- Chen, Lu San (with Yeh, Ché Chih) Oscillation criteria for arbitrary order nonlinear inequalities with deviating arguments. 85a:34097
- Dahiya, R. S. (with Kusano, Takasi; Naito, Manabu) On almost oscillation of functional-differential equations with deviating arguments. 85c:34076
- Dankanich, V. A. Quasiperiodic solutions of systems with lag. (Russian) 85g:34060
- Dylawerski, G. (with Jodel, J.) On Poincaré's translation operator for ordinary equations with retards. 85k:34171
- Fink, A. M. (with Kusano, Takasi) Nonoscillation theorems for differential equations with general deviating arguments. 85m:34111
- Fishman, L. Z. See Nelmark, Yu. I., 85i:34041
- Freedman, Marvin I. See Casal, Alfonso, 85j:34149
- Fukagai, Nobuyoshi (with Kusano, Takasi) On second order functional-differential equations and inequalities with deviating arguments. 85a:34098
- Furumochi, Tetsuo Periodic solutions of functional-differential equations. 85c:34081
- Gopalamsky, K. Oscillations in linear systems of differential-difference equations. 85k:34172
- Grace, S. R. (with Lalli, B. S.) Oscillation theorems for damped differential equations of even order with deviating arguments. 85k:34173
- Graef, John R. (with Grammatikopoulos, Myron K.; Kitamura, Yuichi; Kusano, Takasi; Onose, Hiroshi; Spikes, Paul W.) Nonoscillation theorems for functional-differential equations of arbitrary order. 85m:34112
- (with Seal, Eva H.) An oscillation theorem for  $n$ th order linear functional differential equations. 85g:34061
- Grammatikopoulos, Myron K. See Kulenović, Mustafa, 85i:34040; Graef, John R.; et al., 85m:34112 and Kulenović, Mustafa, 85m:34114
- Györi, I. See Arino, O.; et al., 85k:34168
- Hasard, B. Numerical Hopf bifurcation computation for delay differential systems. 85b:34081
- van der Heiden, Uwe (with Mackey, Michael C.) The dynamics of production and destruction: analytic insight into complex behavior. 85d:34075
- Periodic, aperiodic, and stochastic behavior of differential-difference equations modeling biological and economical processes. 85m:34113
- Hunt, Brian R. (with Yorke, James A.) When all solutions of  $x' = -\sum a_i(t)x(t - T_i(t))$  oscillate. 85k:34169
- Iannacci, R. See de Pascale, E., 85m:34118
- Invernizzi, Sergio (with Zanolin, Fabio) Periodic solutions of functional-differential systems with sublinear nonlinearities. 85i:34039
- Ivanov, Anastol Fiodorovich (with Sarkovskii, O. M.) Periodic solutions of certain classes of differential-difference equations. (Russian) 85b:34077
- Periodic solutions of the differential-difference equation  $x'(t) = -f(x(t-1))$ . (Russian) 85d:34076
- Some comparison theorems for second-order differential equations with deviating arguments. (Russian) 85c:34082
- Jawhari, A. See Arino, O.; et al., 85k:34168
- Jodel, J. See Dylawerski, G., 85k:34171
- Karatueva, N. A. The method of vector Lyapunov functions for systems of differential equations with delay. (Russian) 85k:34174
- Khristova, S. G. See Bainov, D. D., 85k:34170
- Kitamura, Yuichi See Graef, John R.; et al., 85m:34112
- Komlenko, Yu. V. Sufficient conditions for the existence of the Floquet representation for a class of differential equations. (Russian) 85k:34175



- Koplatadze, R. G. Zeros of solutions of first-order differential equations with retarded argument. (Russian. English and Georgian summaries) **85g:34062**
- Kravets, V. I. Investigation of vibratory modes in systems with lag when passing through resonances. (Russian) **85k:34176**
- Kulenović, Mustafa Maintenance of oscillatory and asymptotic behaviour of solutions of differential inequalities under the effect of advanced and mixed argument. **85j:34150** (with Grammatikopoulos, Myron K.) First order functional-differential inequalities with oscillating coefficients. **85i:34040** (with Grammatikopoulos, Myron K.) Stability of the asymptotic behavior of solutions of nonlinear differential inequalities with respect to retardation of the argument. (Russian) **85m:34114**
- Kurbatov, V. G. Periodic solutions of equations of neutral type. (Russian) **85m:34115**
- Kurnish, A. V. On the theory of oscillations of systems with lag in the complex resonance case. (Ukrainian. Russian summary) **85e:34083**
- Kusano, Takaji Oscillation of even order linear functional differential equations with deviating arguments of mixed type. **85h:34082**  
See also Fukagai, Nobuyoshi, **85a:34098**; Singh, Bhagat, **85b:34081**; Dahiya, R. S.; et al., **85c:34076**; Fink, A. M., **85m:34111** and Graef, John R.; et al., **85m:34112**
- Labovskii, S. M. Positive solutions of linear functional-differential equations. (Russian) **85g:34063**
- Ladas, G. (with Sficas, Y. G.; Stavroulakis, I. P.) Functional-differential inequalities and equations with oscillating coefficients. **85f:34128**
- Lalli, B. S. See Grace, S. R., **85k:34173**
- Lapinskii, V. N. Construction of periodic solutions of differential equations with lag. (Russian. English summary) **85b:34078**
- Mackey, Michael C. See van der Helden, Uwe, **85d:34075**
- Martínez-Amores, P. See Cañada, A., **85a:34075**
- Marušák, Pavol On the oscillation of nonlinear differential systems with retarded arguments. (Russian summary) **85e:34084**
- Matysina, É. A. See Matysina, N. V., **85j:34151**
- Matysina, N. V. (with Matysina, É. A.) A variant of the construction of oscillating solutions of a nonlinear problem of Cauchy type. (Russian) **85j:34151**
- Mierczyński, J. Functional differential equations with certain monotonicity properties. **85f:34129**
- Miller, Richard K. See Skar, S. J., **85h:34085**
- Milushcheva, Svetla D. (with Bainov, D. D.) Justification of partially-multiplicative averaging for a class of functional-differential equations with impulses. **85b:34079**
- Myshkis, A. D. (with Bainov, D. D.; Zakhariev, Andrei) Oscillatory and asymptotic properties of a class of operator-differential inequalities. **85g:34064**
- Naito, Manabu See Dahiya, R. S.; et al., **85c:34076**
- Neimark, Yu. I. (with Fishman, L. Z.) On the numerical investigation of equations with lag. (Russian) **85i:34041**
- Nickel, K. Bounds for the set of solutions of functional-differential equations. **85b:34080**
- Novakovskaya, L. I. The effect of external periodic forces on nonlinear systems described by first-order differential equations with deviating argument. (Russian) **85a:34099**
- Ohriaka, Ján Oscillation of second order delay and ordinary differential equation. **85k:34177**
- Oláh, Rudolf Note on the oscillation of differential equation with advanced argument. (Russian summary) **85c:34077**  
Oscillation of linear retarded differential equation. **85m:34116**  
On oscillation of solutions of nonlinear retarded differential equation of Emden-Fowler type. **85m:34117**
- Olbro, A. W. General dynamical systems with heredity. **85e:34085**
- Omari, Pierpaolo Periodic solutions of strongly damped Liénard systems with delay. (Italian summary) **85j:34152**
- Onose, Hiroshi Oscillatory properties of the first-order differential inequalities with deviating argument. **85h:34084**  
Oscillatory properties of the first order nonlinear advanced and delayed differential inequalities. **85h:34083**  
See also Graef, John R.; et al., **85m:34112**
- de Pascale, E. (with Iannacci, R.) Periodic solutions of generalized Liénard equations with delay. **85m:34118**
- Philos, Ch. G. Oscillations of superlinear differential equations with deviating arguments. **85c:34078**  
Some comparison criteria in oscillation theory. **85a:34100**
- Plotnikov, V. A. (with Zheltikov, V. P.) Averaging in differential inclusions with lag. (Russian) **85g:34065**
- Popov, V. M. A frequency domain approach for finding the limit behavior of retarded differential equations. **85k:34178**
- Ronto, N. I. Convergence of the trigonometric collocation method for nonlinear periodic systems of differential equations with retarded argument. (Russian) **85d:34077**
- Rybakowski, Krzysztof P. Some remarks on periodic solutions of Carathéodory RFDEs via Ważewski principle. (Italian summary) **85k:34179**
- Sarkovskii, O. M. See Ivanov, Anatoli Flodorovich, **85b:34077**
- Seal, Eva H. See Graef, John R., **85g:34061**
- Seguier, F. See Arino, O., **85j:34148**
- Sficas, Y. G. See Ladas, G.; et al., **85f:34128**
- Sidorik, T. M. Existence on the half-axis and periodicity of solutions of a differential equation with retarded argument. (Russian) **85j:34153**
- Singh, Bhagat Unbounded trajectories in superlinear functional equations. **85e:34086** (with Kusano, Takaji) Forced oscillations in functional-differential equations with deviating arguments. **85b:34081**
- Šolák, František On some properties of the solutions of the third order nonlinear differential equation with delay. **85k:34180**
- Skar, S. J. (with Miller, Richard K.) On the existence of self-excited oscillations in systems with discontinuous elements. **85h:34085**
- Slyusarchuk, V. E. Bounded solutions of linear functional-differential equations. (Russian) **85j:34154**
- Spikes, Paul W. See Graef, John R.; et al., **85m:34112**
- Stavroulakis, I. P. See Ladas, G.; et al., **85f:34128**
- Takano, Katsuo On global properties of solutions of a certain delay differential equation. **85c:34079**
- Tatariewicz, Krzysztof Quelques remarques sur certains systèmes d'équations différentielles fonctionnelles. [Some remarks on certain systems of differential-functional equations] **85k:34181**
- Vasovskii, D. A. The effect of a small lag in almost periodic higher-order linear systems. (Russian) **85b:34082**
- Werbowski, Jarosław Oscillation of solutions of differential inequalities with deviating arguments of mixed type. (Russian. English and Georgian summaries) **85j:34155**
- Willem, Michel Subharmonic oscillations of nonlinear systems. **85e:34087**
- Yan, Ju Rang Oscillatory behavior of forced second-order nonlinear functional differential equations. **85m:34119**  
Oscillatory behavior of forced second-order nonlinear functional-differential equations. (Chinese) (Not in MR)
- Oscillatory properties of solutions of second order damped nonlinear functional-differential equations. (Chinese. English summary) **85f:34130**
- Yeh, Ché Chih See Chen, Lu San, **85a:34097**
- Yorke, James A. See Hunt, Brian R., **85k:34169**
- Zakhariev, Andrei See Myshkis, A. D.; et al., **85g:34064**
- Zanolin, Fabio See Invernizzi, Sergio, **85i:34039**
- Zennaro, Marino See Bellen, Alfredo, **85g:34059**
- Zheltikov, V. P. See Plotnikov, V. A., **85g:34065**

## secondary classifications (34K15)

- Badrakhan, Farouk Approximate backbone curves for nonlinear systems with several degrees of freedom. (French and German summaries) **85f:70043**
- Bainov, D. D. See Mishev, D. P., **85k:34076**
- Bardi, Martino Exchange of stability along a branch of periodic solutions of a single specie model. **85b:92006**
- Bell, Jonathan (with Cosner, C.) Threshold behavior and propagation for nonlinear differential-difference systems motivated by modeling myelinated axons. **85h:92018**
- Belyustina, L. N. (with Fishman, L. Z.) Self-oscillations in a system of phased automatic frequency control with delay. (Russian) **85f:93033**
- Bykov, Ya. V. Oscillation of solutions of first-order functional-integro-differential equations of Barbasin type. (Russian) **85a:45014**
- Collatz, Lothar Anwachsene Schwingungen bei einigen Differenzengleichungen mit multiplikativem Verzögerungsglied. (English summary) [Unboundedly increasing oscillations in some difference equations with multiplicative delay term] **85a:39004**
- Cosner, C. See Bell, Jonathan, **85h:92018**
- Dodd, R. K. See Morris, H. C.; et al., **85h:92041b**
- Feshchenko, T. S. See Romanenko, E. Yu., **85k:34186**
- Fishman, L. Z. See Belyustina, L. N., **85f:93033**
- Gopalsamy, K. Harmless delays in a periodic ecosystem. **85c:92031**
- Grace, S. R. (with Lalli, B. S.) Oscillation theorems for  $n$ th order nonlinear functional-differential equations. **85j:34055**  
(with Lalli, B. S.) On oscillation of solutions of higher order forced functional-differential inequalities. **85j:34056**  
Oscillation theorems for  $n$ th-order differential equations with deviating arguments. **85j:34057**
- Györi, I. On the oscillatory behaviour of solutions of certain nonlinear and linear delay differential equations. **85m:34054**
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Drager, Lance D. (with Layton, William) On nonlinear difference approximations to nonlinear functional-differential equations. 85j:34165

Hornung, Ulrich The mathematics of hysteresis. 85m:34128

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Minsker, Steven Area-splitting centroids. 85f:34144

Zennaro, Marino Maximum principles for linear difference-differential operators in periodic function spaces. 85c:34084

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Eder, Elmar The functional-differential equation  $x'(t) = x(x(t))$ . 85i:34037

de Gee, Maarten Characteristic roots of discretized functional-differential equations. 85h:85063

Haverkamp, R. Ein numerisches Verfahren zur Lösung retardierter Differentialgleichungen. [A numerical procedure for the solution of retarded differential equations] (Not in MR)

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Lénárd, Margit (with Székelyhidi, László) Functional-differential equations by spline functions. 85m:65067

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Rosati, Mario Valerio Some results concerning weak monotonicity for nonlinear systems of functional-finite difference inequalities of parabolic type. (Italian summary) 85c:65116

Rvachov, V. O. (with Starets, G. A.) Some atomic functions and their applications. (Russian. English summary) 85b:26024

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#### 35-XX PARTIAL DIFFERENTIAL EQUATIONS

##### 35-00 Handbooks, dictionaries, and other reference works

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Tarzia, Domingo Alberto A review of moving and free boundary problems for the heat equation. The Stefan problem. (Spanish. English and French summaries) 85g:35123

##### 35-01 Elementary exposition; textbooks

(Alvares, José Ramil) See Budak, B. M.; et al., 85g:35001

Bielestein, Norman \* Mathematical methods for wave phenomena. 85j:35001

Budak, B. M. (with Samarskii, A. A.; Tikhonov, A. N.) \* Problemas de la física matemática. Tomo 1, 2. (Spanish) [Problems in mathematical physics. Vol. 1, 2] 85g:35001

Drasin, P. G. \* Solitons. 85e:35001

Folland, G. B. \* Lectures on partial differential equations. 85i:35001

John, Fritz A walk through partial differential equations. (See 85g:35005)

Olariu, Valter See Teodorescu, Nicolae Victor, 85i:35002

Samarskii, A. A. See Tikhonov, A. N., 85c:35001 and Budak, B. M.; et al., 85g:35001

Teodorescu, Nicolae Victor (with Olariu, Valter) \* Ecuații diferențiale și cu derivate parțiale. Vol. III. (Romanian) [Differential and partial differential equations. Vol. III] 85i:35002

Tikhonov, A. N. (with Samarskii, A. A.) \* Ecuaciones de la física matemática. (Spanish) [The equations of mathematical physics] 85c:35001

See also Budak, B. M.; et al., 85g:35001

(Tolosa, Juan) See Tikhonov, A. N., 85c:35001

Tutschke, Wolfgang ★ Partielle Differentialgleichungen. (German) [Partial differential equations] 85h:35001

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(Boll, Ludwig) See Dieudonné, J., 85f:58001

Dieudonné, J. ★ Grundzüge der modernen Analysis. 8. (German) [Foundations of modern analysis. 8] 85f:58001

Nečas, Jindřich ★ Introduction to the theory of nonlinear elliptic equations. 85m:35022

Petersen, Bent E. ★ Introduction to the Fourier transform & pseudodifferential operators. 85d:46001

Steklov, V. A. ★ Основные задачи математической физики. (Russian) [Fundamental problems in mathematical physics] 85h:01033

(Vladimirov, V. S.) See Steklov, V. A., 85h:01033

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35-02 Advanced exposition (research surveys, monographs, etc.)

(Bullough, R. K.) See Solitons, 85a:35001

(Caudrey, P. J.) See Solitons, 85a:35001

Colton, David (with Kress, R.) ★ Integral equation methods in scattering theory. 85d:35001

(Dubrovina, B. A.) See Solitons, 85a:35001

Fefferman, Charles The uncertainty principle. 85f:35001

Hörmander, Lars ★ The analysis of linear partial differential operators. I. 85g:35002a

★ The analysis of linear partial differential operators. II. 85g:35002b

Kondrat'ev, V. A. (with Oleinik, O. A.) Boundary value problems for partial differential equations in nonsmooth domains. (Russian) 85j:35002

Kress, R. See Colton, David, 85d:35001

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Shishataki, S. P. ★ Проблема единственности решений задач Коши для вырождающихся уравнений. (Russian) [The problem of the uniqueness of solutions of Cauchy problems for degenerate equations] 85h:35002

Straughan, Brian ★ Instability, nonexistence and weighted energy methods in fluid dynamics and related theories. 85c:35002

Solitons ★ Солитоны. (Russian) [Solitons] 85a:35001

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Nečas, Jindřich ★ Introduction to the theory of nonlinear elliptic equations. 85m:35022

Nikol'skii, E. V. ★ Метод эквивалентных систем в теории распространения волн. (Russian) [The method of equivalent systems in the theory of wave propagation] 85k:35010

Pommaret, J.-F. ★ Системы уравнения с частными производными и псевдогруппы Ли. (Russian) [Systems of partial differential equations and Lie pseudogroups] 85j:58151

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35-03 Historical (must also be assigned at least one classification number from Section 01)

Chen, Qing Yi A survey of some trends in partial differential equations. (Chinese) (Not in MR)

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Arsenin, V. Ya. Ill-posed problems. (Russian) (See 85g:01004)

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Pommaret, J.-F. The genesis of the Galois theory for systems of partial differential equations. 85b:12001

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(Vladimirov, V. S.) See Steklov, V. A., 85h:01033

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Nonlinear phenomena in physics and biology ★ Nonlinear phenomena in physics and biology. 85g:92003

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Aleksandryan, G. R. (with Yagdzhyan, K. A.) Conditions for well-posedness of the Cauchy problem and propagation of singularities of solutions of equations with multiple characteristics. (Russian. English and Armenian summaries) 85c:35055

Galaktionov, V. A. Globally unsolvable Cauchy problems for quasilinear parabolic equations. (Russian) 85c:35043

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35A07 Local existence and uniqueness theorems [See also 35H05, 35Sxx.]

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Okaji, Takashi Uniqueness in the Cauchy problem for a class of partial differential operators degenerate on the initial surface. 85k:35004

Parenti, Cesare See Lewis, Jeff E., 85k:35003

Tarama, Sigee Une remarque sur un exemple de Mizohata concernant l'unicité local dans le problème de Cauchy. (English summary) [Remark on an example of Mizohata concerning local uniqueness in the Cauchy problem] 85j:35008

Tavares, Joaquim See Hounie, Jorge, 85f:35005

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Wang, Jing Rong Sufficient conditions for the local solvability of linear partial differential operators with multiple characteristics. (Chinese. English summary) 85f:35007

Yamasaki, Asanobu On the local solvability of  $D_1^2 + A(x_2, D_2)$ . 85d:35008

Zilly, Claude ★ Uniqueness and nonuniqueness in the Cauchy problem. 85d:35009

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Shibata, Yoshihiro (with Tautumi, Yoshio) Local existence of  $C^\infty$ -solution for the initial-boundary value problem of fully nonlinear wave equation. 85h:35147

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Uhlmann, Gunther A. See Mendoza, Gerardo A., 85h:58164

## 35A10 Cauchy-Kowalewski theorems

Tutschke, Wolfgang (with Withalm, Claudio) The Cauchy-Kowalevski theorem for pseudoholomorphic functions in the sense of L. Bers. 85e:35005

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**Tsuchiya, Takashi** An exactly solvable difference equation that gives pure chaos for a continuous range of a parameter. **85a:58009**

**Zheng, Xing Li** On initial value problem of a class of degenerate equation. **85f:35146**

### 35A15 Variational methods

**Anderson, Ian M.** (with Duchamp, T.) Variational principles for second-order quasilinear scalar equations. **85k:35005**

**Duchamp, T.** See **Anderson, Ian M.**, **85k:35005**

**Kudryavtsev, L. D.** The variational method of searching for generalized solutions of differential equations in function spaces with power weight. (Russian) **85a:35004**

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**Mirianashvili, M. G.** The method of local variations for a functional. (Russian) **85h:49068**

### 35A20 Analytic methods, singularities

**Baras, Pierre** (with Pierre, M.) Singularités éliminables d'équations elliptiques semi-linéaires. (English summary) [Removable singularities for semilinear elliptic equations] **85a:35005**

**Charrière, Hélène** Une équation aux dérivées partielles avec petits dénominateurs. (English summary) [A partial differential equation with small denominators] **85g:35013**

**Chen, Hua** (with Wang, Wei Ke) The analytical solution of a class of Fuchsian-type partial differential equations with operator coefficients. (Chinese. English summary) **85a:35006**

**Dal Fabbro, F.** (with Furioli Martinoli, A.) Theorems of existence in the large, in the analytic context, for the linear system  $z_y = z^p A(y)z_x + B(z, y)z + f(z, y)$ . (Italian. English summary) **85h:35007**

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**Gérard, Christian** Réflexion du front d'onde polarisé des solutions de systèmes d'équations aux dérivées partielles. (English summary) [Reflection of the polarization set of solutions of systems of partial differential equations] **85h:35008**

**Gramchev, Todor** Propagation of singularities for boundary value problems. **85e:35002**

**Hamada, Yūsaku** (with Takeuchi, Akira) Sur le problème de Goursat holomorphe pour certains opérateurs à caractéristiques en involution. [The holomorphic Goursat problem for certain operators with involutive characteristics] **85j:35010**

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**Hong, Qing** On the solutions of a linear first-order partial differential equation with two complex variables. (Chinese. English summary) **85k:35006**

**Ishimura, Ryuichi** Sur les équations différentielles dans l'espace des polynômes et dans l'espace des séries formelles. [On differential equations in the space of polynomials and in the space of formal series] **85a:35007**

**Lopatnikov, V. I.** Singularities of some solutions of the first problem of magnetostatics. (Russian) **85a:35008**

**Lu, Zhu Jia** Discrete phenomena in the existence of solutions of the Goursat problem for equations with multicharacteristics. (Chinese) **85h:35010**

**Martinez, André** Prolongement des solutions holomorphes de problèmes aux limites. (English summary) [Extension of holomorphic solutions of boundary value problems] **85e:35006**

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**Ōuchi, Sunao** Characteristic Cauchy problems and solutions of formal power series. **85g:35014**

**Pierre, M.** See **Baras, Pierre**, **85a:35005**

**Qi, Min You** Partial differential equations having a low-dimensional regular singular manifold. (Chinese) (Not in MR)

On partial differential equations with a manifold of regular singularity of lower dimension. **85k:35007**

**Schilts, D.** (with Vaillant, J.; Wagschal, Claude) Problème de Cauchy ramifié: racine caractéristique double ou triple en involution. [The ramified Cauchy problem: double or triple characteristic root in involution] **85e:35007**

**Sjöstrand, J.** Analytic regularity for operators with multiple characteristics. **85k:35008**

**Takeuchi, Akira** See **Hamada, Yūsaku**, **85h:35009** and **85j:35010**

**Trèves, François** On the approximation of solutions of linear PDE with analytic coefficients. **85j:35011**

**Uchikoshi, Keisuke** Singular Cauchy problems for second order partial differential operators with noninvolutory characteristics. **85h:35012**

**Urabe, Jūichirō** Hamada's theorem for a certain type of the operators with double characteristics. **85j:35012**

**Vaillant, J.** See **Schilts, D.**; et al., **85e:35007**

**Wagschal, Claude** Problème de Cauchy ramifié à caractéristiques multiples holomorphes de multiplicité variable. [Ramified Cauchy problem with multiple holomorphic characteristics of variable multiplicity] **85e:35008**

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**Yan, Da Gui** On a class of analytic Cauchy problems with characteristic points on the initial hypersurface. (Chinese. English summary) **85d:35010**

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**Baouendi, M. Salah** (with Chang, C. H.; Trèves, François) Microlocal hypo-analyticity and extension of CR functions. **85h:32030**

**Bengel, G.** Convergence of formal solutions of singular partial differential equations. **85h:35044**

**Cardoso, F.** (with Santos Filho, J. R.) Propagation of singularities of solutions of pseudodifferential equations. **85h:58108**

**Cattabriga, Lamberto** On the surjectivity of differential polynomials on Gevrey spaces. **85f:35046**

**Chang, C. H.** See **Baouendi, M. Salah**; et al., **85h:32030**

**Hanges, Nicholas** (with Sjöstrand, J.) Propagation of analyticity for a class of nonmicrocharacteristic operators. **85g:58005**

**Iordanov, I. V.** See **Popivanov, Pet'ar R.**, **85k:35241**

**Iwaniec, T.** On Cauchy-Riemann derivatives in several real variables. **85e:30032**

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**Laubin, Pascal** Analyse microlocale des singularités analytiques. [Microlocal analysis of analytic singularities] **85g:58087**

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**Salvitti, Reinaldo** Solutions of a Cauchy-Goursat problem. **85g:35117**

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**Shatalov, V. E.** Asymptotic solutions of a complex-analytic characteristic Cauchy problem. (Russian) **85e:58146**

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**Uchikoshi, Keisuke** Microlocal analysis of partial differential operators with irregular singularities. **85e:58139**

**Wen, Guo Chun** Some boundary value problems for a class of systems of second-order nonlinear complex equations with  $n$  unknown complex functions. (Chinese. English summary) **85k:35075**

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**Carroll, Robert Wayne** Partial differential equation techniques in transmutation. **85j:35202**

**Püngel, Jürgen** Zur Darstellung von Lösungen einer Klasse linearer partieller Differentialgleichungen. (English and Italian summaries) [On the representation of solutions of a class of linear partial differential equations] **85j:35037**

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**Nikol'skiĭ, È. V.** \*Метод эквивалентных систем в теории распространения волны. (Russian) [The method of equivalent systems in the theory of wave propagation] **85k:35010**

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**Wilde, Alan C.** Differential equations involving circulant matrices. **85a:15025**

### 35A27 Sheaf-theoretic and microlocal methods; methods of homological algebra [See also 32C38, 58G07.]

**Shanmugan, N. A.** Local nonsolvability and nonhypoellipticity of (pseudo-) differential equations with weighted symbols. (Russian) **85b:35001**

**Zanghirati, L.** Iterates of operators and anisotropic microlocal Gevrey regularity. (Italian) **85h:35013**

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- Hangos, Nicholas (with Sjöstrand, J.) Propagation of analyticity for a class of nonmicrocharacteristic operators. 85g:58085
- Kashiwara, Masaki (with Kawai, Takahiro) Microlocal analysis. 85h:58150
- Kataoka, Kiyomi Some properties of mild hyperfunctions and an application to propagation of micro-analyticity in boundary value problems. 85k:58071
- Kawai, Takahiro See Kashiwara, Masaki, 85h:58150
- Lê Dũng Tráng (with Mekhout, Z.) Introduction to linear differential systems. 85b:14013
- Malgrange, B. Déformations de systèmes différentiels et microdifférentiels. [Deformations of differential and microdifferential systems] 85h:58160
- Mekhout, Z. See Lê Dũng Tráng, 85b:14013
- Melrose, Richard The Cauchy problem for effectively hyperbolic operators. 85k:35134
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- Soumen, F. Microfunctions with values in a Clifford algebra I. 85h:30062
- Tréprou, Jean-Marie Systèmes différentiels à caractéristiques simples et structures réelles-complexes (d'après M. S. Baouendi et F. Trèves; M. Sato, T. Kawai et M. Kashiwara). [Differential systems with simple characteristics and real-complex structures (after M. S. Baouendi and F. Trèves; M. Sato, T. Kawai and M. Kashiwara)] 85i:58109
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- 35A30 Geometric theory, characteristics, transformations**
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- Dorodnitsyn, V. A. (with Knyazeva, I. V.; Svirachevskii, S. R.) Group properties of the heat equation with source in the two-dimensional and three-dimensional cases. (Russian) 85e:35010
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- Gotovtsev, I. B. Geometric aspects of the method of differential relations. (Russian) 85f:35008
- Huang, Xun Cheng Another way of deriving Bäcklund transformations for nonlinear evolution equations. (Chinese. English summary) 85a:35009
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- Kalinowski, M. W. On the old-new method of solving nonlinear equations. 85i:35005
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- Lopatkin, A. K. Asymptotic splitting of completely integrable Pfaffian systems. (Russian) 85g:35015
- Newman, Thomas G. Geometric methods in dynamic image processing. (See 85i:00011)
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- Rosen, G. Reciprocal transformation for one-dimensional conservation equations. 85e:35003
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- Ames, W. F. See Boisvert, R. E.; et al., 85h:35169 and Ames, K. A., (85b:00006)
- Berger, Melvyn S. Vortex phenomena. 85e:58004
- Boisvert, R. E. (with Ames, W. F.; Srivastava, U. N.) Group properties and new solutions of Navier-Stokes equations. 85h:35169
- Brylinski, Jean-Luc Modules holonomes à singularités régulières et filtration de Hodge. [Holonomic modules with regular singularities and the Hodge filtration] 85m:32007a
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- Bunimovich, A. I. (with Krasnoslobodtsev, A. V.) Some invariant transformations of kinetic equations. (Russian. English summary) 85d:82061
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- Dorodnitsyn, V. A. (with Knyazeva, I. V.; Svirachevskii, S. R.) Group properties of the anisotropic heat equation with source  $T_t = \sum_i (K_i(T)T_{x_i})_{x_i} + Q(T)$ . (Russian. English summary) 85d:80003
- (with Svirachevskii, S. R.) Lie-Bäcklund groups admitted by a heat equation with a source. (Russian. English summary) 85f:58102
- Edelen, Dominic G. B. Equations of balance, horizontal distributions and foliation-valued solutions. 85d:58003
- Finley, J. D., III Criteria for the existence of Bäcklund transformations. 85d:58092
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- Georgescu-Buzău, E. (with Teodorescu, N. N.; Varzan, Gh.) Sur la géométrisation des équations avec dérivées partielles linéaires du deuxième ordre. [On the geometrization of second-order linear partial differential equations] 85g:53016
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- Huang, Xun Cheng On the relation between the Bäcklund transformations of higher-dimensional and lower-dimensional sine-Gordon equations. (Chinese) 85i:35125
- Ibragimov, N. Kh. \*Группы преобразования в математической физике. (Russian) [Transformation groups in mathematical physics] 85j:58003
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- Krasnoslobodtsev, A. V. See Bunimovich, A. I., 85d:82061
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- Olver, Peter Group theoretic classification of conservation laws in elasticity. 85e:73012
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- Paul, S. N. See Roy Chowdhury, A., 85i:35133
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- (with Paul, S. N.) On the group theoretic approach to the symmetries for a class of generalized nonlinear Schrödinger equations  $i\psi_t - \psi\psi_x = f(x, \psi, \psi^*, \psi_x, \psi_x^*)$ . 85i:35133
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Chan, C. Y. Alternating bounds converging to the solution of a semilinear Euler-Poisson-Darboux equation. 85h:35168

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Koshelev, A. I. The weighted Korn inequality and some iteration processes for quasilinear elliptic systems. (Russian) 85e:35050

Koz'mina, E. S. Approximation of the solution of a nonlinear hyperbolic equation with a functional coefficient by means of solutions of an almost linear hyperbolic equation. (Russian) 85f:35142

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Marcinkowska, H. A remark on approximate solving of a class of initial-boundary value problems. 85m:65118

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Platen, Eckhard Approximation of first exit times of diffusions and approximate solution of parabolic equations. 85h:60095

Rzaev, E. A. Approximation of the solution of a nonregular mixed problem for the quasilinear heat equation with  $L_2$ -data by the solution of a regular problem. (Russian) (See 85g:35004)

Sharma, Shri Deo Finite integrals involving generalized spheroidal, multiple  $H$ -, and double hypergeometric functions. 85b:33009

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Cygan, Jacek M. (with Richardson, Leonard F.) Global solvability on two-step compact nilmanifolds. 85f:22009

Eremin, M. S. Transformation operators in a convex domain of the space  $C^2$  of solutions of certain integro-differential equations. (Russian) 85c:32013

van den Essen, Arno The kernel and cokernel of a differential operator in several variables. 85m:32008a

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Tsuchiya, Masaaki Analyticity preserving properties of resolvents for degenerate diffusion operators in one dimension. 85b:47048

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Levine, Howard A. Continuous data dependence, regularization, and a three lines theorem for the heat equation with data in a space like direction. 85h:35107

Mamedov, I. T. Some qualitative theorems on solutions of second-order quasilinear parabolic equations with discontinuous coefficients. (Russian) 85m:35036

Mikhailov, A. P. Properties of solutions unbounded in time of diffusion equations. (Russian. English and German summaries) 85j:35093

Miklyukov, V. M. Some questions of the qualitative theory of equations of the minimal surface type. (Russian) 85m:53005

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- Bykov, Ya. V. (with Kultaev, T. Ch.) Oscillation of solutions of a class of parabolic equations. (Russian) 85i:35009
- Casasnov, T. (with Haraux, A.) Propriétés oscillatoires des solutions de certaines équations des ondes semi-linéaires. (English summary) [Oscillatory properties of the solutions to some semilinear wave equations] 85k:35011
- Dahlberg, Björn E. J. (with Jerison, David S.; Kenig, Carlos E.) Area integral estimates for elliptic differential operators with nonsmooth coefficients. 85h:35021
- Haraux, A. See Casasnov, T., 85k:35011
- Hu, Xuan Da (with Yu, Zhong Ming) Comparison theorems and stochastic boundedness. (Chinese) 85a:35010
- Jerison, David S. See Dahlberg, Björn E. J.; et al., 85h:35021
- Kenig, Carlos E. See Dahlberg, Björn E. J.; et al., 85h:35021
- Kreith, Kurt (with Swanson, Charles A.) Boundedness criteria for hyperbolic characteristic initial value problems. 85f:35011
- (with Kusano, Takasi; Yoshida, Norio) Oscillation properties of nonlinear hyperbolic equations. 85e:35012
- Kulenović, Mustafa On oscillation of nonlinear partial differential inequalities. (Serbo-Croatian summary) 85h:35022
- Kultaev, T. Ch. See Bykov, Ya. V., 85i:35009
- Kusano, Takasi See Kreith, Kurt; et al., 85f:35011
- Nasrilyal, A. On the growth of entire solutions of generalized axially symmetric Helmholtz equation. 85c:35004
- Shibata, Yoshihiro Lower bounds of solutions of general boundary value problems for differential operators with constant coefficients in a half-space. 85f:35012
- Swanson, Charles A. See Kreith, Kurt, 85f:35011
- Tranov, M. I. Oscillation of solutions of partial differential equations with deviating argument. (Russian) 85h:35023
- Yoshida, Norio Oscillation properties of solutions of second order elliptic equations. 85a:35011
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## secondary classifications (35B05)

- Bandle, Catherine (with Sperb, R. P.; Stakgold, I.) Diffusion and reaction with monotone kinetics. 85k:35085
- Bénilan, Philippe (with Díaz Díaz, Jesús Ildefonso) Comparison of solutions of nonlinear evolution problems with different nonlinear terms. 85h:35113
- Díaz Díaz, Jesús Ildefonso See Bénilan, Philippe, 85h:35113
- Dobrovtor, I. G. Oscillatory properties of solutions of equations with a polyharmonic operator in the space  $E^n$ . (Russian) 85f:31011
- Galaktionov, V. A. Globally unsolvable Cauchy problems for quasilinear parabolic equations. (Russian) 85c:35043
- Kreith, Kurt (with Swanson, Charles A.) Asymptotic solutions of semilinear elliptic equations. 85g:35045
- Landis, E. M. Behavior of solutions of quasilinear elliptic equations in unbounded domains. (Russian) 85m:35016
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- Stakgold, I. See Bandle, Catherine; et al., 85k:35085
- Swanson, Charles A. See Kreith, Kurt, 85g:35045

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- Balandin, A. V. (with Vennitskii, A. I.; Utkin, G. A.) Periodic solutions of a one-dimensional wave equation with homogeneous conditions on moving boundaries. (Russian) 85j:35016
- Basley, N. W. (with Weinacht, Richard J.) Bifurcation of periodic solutions for wave equations with scalar nonlinearities. 85k:35013
- Devasahayam, M. Paul Monotone method and periodic solution of nonlinear parabolic boundary value problem for systems. 85e:35013
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- Hong, Chong Wei See Ding, Wei Yue, 85f:35013
- Kato, Hisako (with Nakao, Mitsuhiro) Existence of strong and smooth periodic solutions of some nonlinear evolution equations. 85d:35011
- Liu, Bao Ping (with Pao, C. V.) Green's function method for periodic traveling wave solutions of the KdV equation. 85e:35014
- Mawhin, J. Nonlinear functional analysis and periodic solutions of semilinear wave equations. 85d:35012
- Mel'nikov, A. M. Periodic solutions of the two-phase Stefan problem. (Russian) 85j:35017
- Myshkis, A. D. (with Filimonov, A. M.) Periodic oscillations in nonlinear one-dimensional continua and their application to problems of longitudinal dynamics of a train. (Russian. English summary) 85h:35024
- Nakao, Mitsuhiro See Kato, Hisako, 85d:35011
- Narasaki, Takashi On the existence of classical periodic solutions of the equation  $u_{tt} - (\sigma(u_x))_x - u_{xx} = f$ . 85j:35018
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- Peral Alonso, Irene See Aguirre, J., 85k:35012
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- Rabinowitz, Paul H. Large amplitude time periodic solutions of a semilinear wave equation. 85m:35006
- Salvi, Rodolfo Periodic solutions of equations for nonhomogeneous incompressible viscous fluids. (Italian) 85h:35025
- Šteďrý, Milan See Petsel'tová, Hana, 85k:35014
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- Cicogna, G. Periodic solutions of some nonlinear evolution equations. 85e:58094
- Doppel, Karl (with Jacob, Niels) Zur Konstruktion periodischer Lösungen von Pseudodifferentialgleichungen mit Hilfe von Operatoralgebren. [The construction of periodic solutions of pseudodifferential equations by means of operator algebras] 85k:35237
- Jacob, Niels See Doppel, Karl, 85k:35237
- Lauerová, Dana The existence of a periodic solution of a parabolic equation with the Bessel operator. (Russian and Czech summaries) 85h:35111
- Laser, A. C. Some remarks on periodic solutions of parabolic differential equations. 85g:35062
- Liu, Bao Ping Periodic solutions of partial differential equations with deviating arguments. (Chinese. English summary) 85d:35103
- Nkashama, M. N. (with Willem, Michel) Periodic solutions of the boundary value problem for the nonlinear heat equation. 85i:35080
- Sadiku, J. S. The periodic and eigen solutions of the equation governing a nonrotating viscoelastic earth model under transient force. 85c:73065
- Sullivan, Donald The wave equation and periodicity. 85h:35134
- Teramoto, Yoshiaki On the stability of periodic solutions of the Navier-Stokes equations in a noncylindrical domain. 85j:35160
- Willem, Michel See Nkashama, M. N., 85i:35080

## 35B15 Almost periodic solutions

- Cheban, D. N. Compatible solutions of linear partial differential equations. (Russian) 85h:35027
- Corduneanu, C. Almost periodic solutions to nonlinear elliptic and parabolic equations. 85h:35028
- Almost periodic solutions to some nonlinear parabolic equations. (See 85e:34003)
- Pankov, A. A. Second-order nonlinear elliptic equations with almost periodic coefficients. (Russian) 85g:35019
- Shtabalyuk, P. I. Almost periodic solutions of a factored partial differential equation. (Russian. English summary) 85g:35020
- Almost periodic solutions of a quasilinear system of partial differential equations. (Russian) 85e:35015

## 35B20 Perturbations

- Codegone, M.  $G$ -convergence and scattering problems. (Italian summary) 85a:35012
- Ifimie, V. Le principe d'absorption limitée pour une classe d'opérateurs formellement hypoelliptiques. (English summary) [The limiting absorption principle for formally hypoelliptic operators] 85g:35013
- Leonov, K. Ya. Boundedness of the rate of propagation of perturbations. (Russian. English and Azerbaijani summaries) 85i:35010
- Saint Jean Paulin, Jeannine Homogénéisation et perturbations dans un problème lié à l'échauffement d'un câble électrique. (English summary) [Homogenization and perturbations in a problem related to the heating of an electric cable] 85b:35004

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- Barker, J. W. Interactions of fast and slow waves in hyperbolic systems with two time scales. 85h:35139
- Chikwendu, S. C. Fourier transform perturbation solution of elliptic equations with small nonlinearities. 85a:35035
- Gomatam, Jagannathan See Welsh, Brian J., 85i:35084
- Welsh, Brian J. (with Gomatam, Jagannathan) A trial phase function method for a class of  $\lambda$ - $\omega$  reaction-diffusion systems: reduction to a Schrödinger type problem in an eigen subdomain. 85i:35084

## 35B25 Singular perturbations

- Chen, Qi Hong See Wang, Yun Bo; et al., 85e:35017
- Dzhavadov, M. G. See Volevich, L. R., 85j:35020
- Greenlee, W. Singular perturbations of multiple eigenvalues of nonselfadjoint operators. II. (French summary) 85j:35019
- Haio, George C. (with Weinacht, Richard J.) Singular perturbations for a semilinear hyperbolic equation. 85k:35015
- Krivenko, E. V. See Zhikov, V. V., 85f:35015
- Laver, A. G. (with Sidenko, N. R.) Asymptotic behavior of the solution of a time-periodic boundary value problem for a singularly perturbed nonlinear parabolic equation with rapidly oscillating coefficients. (Russian) 85i:35011
- (Li, Rong Hua) See Su, Yu Cheng, 85e:35016
- Lin, Zong Chi Singular perturbation of first boundary value problem for higher order quasilinear elliptic equations involving many small parameters. 85f:35014
- Singular perturbation of first boundary value problem for higher-order quasilinear elliptic equations involving many small parameters. (Chinese) (Not in MR)
- Qiu, Pei Zhang See Wang, Yun Bo; et al., 85e:35017
- Rabinowitz, Paul H. A rapid convergence method for a singular perturbation problem. (French summary) 85h:35029

- Roos, Hans-Görg (with Tobiska, Lutz) Singularly perturbed elliptic problems of second order with a singular line. (German and Russian summaries) **85k:35016**
- Safaryan, R. G. See Safaryan, V. V., **85h:35030**
- Safaryan, V. V. (with Safaryan, R. G.) Propagation of concentration waves, and large deviations from an averaged system. (Russian) **85h:35030**
- Sidenko, N. R. See Laver, A. G., **85i:35011**
- Su, Yu Cheng ★ Qi yi shengdonghongde bianjie ceng jiaozhenfa. (Chinese) [Boundary layer correction methods for singular perturbations] **85e:35016**
- Tobiska, Lutz See Roos, Hans-Görg, **85k:35016**
- Vasil'eva, A. B. Periodic solutions of equations of parabolic type with small parameters. (Russian) **85g:35021**
- Volevich, L. R. (with Dzhabadov, M. G.) Uniform estimates for solutions of hyperbolic equations with a small parameter multiplying the highest derivatives. (Russian) **85j:35020**
- Wang, Yun Bo (with Qiu, Pei Zhang; Chen, Qi Hong) A remark on the limit relation between the fundamental solutions of hyperbolic and parabolic equations. (Chinese. English summary) **85e:35017**
- Weinacht, Richard J. See Haiso, George C., **85k:35015**
- Zhikov, V. V. (with Krivenko, E. V.) Averaging of singularly perturbed elliptic operators. (Russian) **85f:35015**

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- Berlyand, L. V. Asymptotic behavior of the solutions of the first boundary value problem of elasticity theory in domains with a fine-grained boundary. (Russian) **85i:35015**
- Brauner, C.-M. (with Eckhaus, W.; Garbey, M.; van Harten, Aart) On the transition layer along a free boundary. (See **85k:00008**)
- Eckhaus, W. See Brauner, C.-M.; et al., **(85k:00008)**
- Felgenhauer, Andreas See Goering, Herbert; et al., **85i:35029**
- Gao, Ru Xi Uniformly valid solutions of problems with a turning point. (Chinese. English summary) **85j:35033**
- Garbey, M. See Brauner, C.-M.; et al., **(85k:00008)**
- Gartland, E. C., Jr. Approximation of a nonsymmetric, singularly perturbed problem. (See **85g:65007**)
- Goering, Herbert (with Felgenhauer, Andreas; Lube, Gert; Roos, Hans-Görg; Tobiska, Lutz) ★ Singularly perturbed differential equations. **85i:35029**
- Gol'dberg, V. N. Convergence of the solution of a singularly perturbed mixed problem for a hyperbolic system on the plane in the case of branching of the solution of the degenerate problem. III. (Russian) **85k:35141**
- van Harten, Aart See Brauner, C.-M.; et al., **(85k:00008)**
- Hosono, Yuzo Traveling wave front solutions of some competitive systems with density dependent diffusion. **85e:92012**
- Iosif'yan, G. A. See Oleinik, O. A.; et al., **85g:35022**
- Jiang, Fu Ru On the uniformly valid asymptotic solution of nonlinear Dirichlet problem. **85e:35049**
- Kadykenov, B. M. Asymptotic expansion of the solution of a singularly perturbed mixed problem with a large initial velocity for hyperbolic equations with incomplete degeneration. (Russian) **85j:35034**
- Kamin, Shoshana Exponential descent of solutions of elliptic singular perturbation problems. **85j:35054**
- Komornik, V. Perturbations singulières de systèmes distribués. (English summary) [Singular perturbations of unstable distributed systems] **85e:49006**
- Kostenko, A. V. See Vigak, V. M., **(85i:00006)**
- Laver, A. G. (with Sidenko, N. R.) Averaging of a time-periodic boundary value problem for a singularly perturbed weakly nonlinear parabolic equation. (Russian) **85f:35114**
- Lube, Gert See Goering, Herbert; et al., **85i:35029**
- Nakasawa, Hiroshi Inviscid disturbance equations in linear stability theory in fluid dynamics and geophysics. **85i:76029**
- Oleinik, O. A. (with Panasenko, G. P.; Iosif'yan, G. A.) Homogenization and asymptotic expansions for solutions of the elasticity system with rapidly oscillating periodic coefficients. **85g:35022**
- Panasenko, G. P. See Oleinik, O. A.; et al., **85g:35022**
- Roos, Hans-Görg See Goering, Herbert; et al., **85i:35029**
- Sánchez-Palencia, E. Perturbation of eigenvalues in thermoelasticity and vibration of systems with concentrated masses. **85m:73010**
- Sharakhank, A. A. Some second-order difference schemes for equations with a small parameter multiplying the highest derivative. (Russian. English summary) **85m:65068**
- Sidenko, N. R. See Laver, A. G., **85f:35114**
- Tobiska, Lutz See Goering, Herbert; et al., **85i:35029**
- Vigak, V. M. (with Kostenko, A. V.) Construction of the solution of a problem of minimal-energy-loss control of the heating of a body. (Russian) (See **85i:00006**)

## 35B30 Dependence of solutions on initial and boundary data, parameters

- Geveci, Tunc Some types of partial differential operators and associated well-posed problems. (See **85h:65002**)
- Landis, E. M. The dependence of classes of uniqueness of solution of the second initial-boundary value problem for the heat equation in an unbounded domain on the geometry of the domain. (Russian) **85i:35012**

## secondary classifications (35B30)

- Chirilă, S. Uniqueness and continuous data dependence in dynamical problems of nonlinear thermoelasticity. **85f:73007**
- Uniqueness and continuous dependence results for the incremental thermoelasticity. **85f:73089**
- Uniqueness and continuous dependence results in thermodynamics with internal state variables. (Russian and Polish summaries) **85c:73075**

- Crooks, P. S. (with Payne, L. E.) Continuous dependence on geometry for the backward heat equation. **85j:35189**
- Gol'dberg, V. N. Continuous dependence on initial conditions of solutions of mixed problems for hyperbolic systems on a plane. (Russian) **85k:35153**
- Herrero, Miguel A. On the growth of the interfaces of a nonlinear degenerate parabolic equation. **85g:35072**
- Knops, R. J. (with Payne, L. E.) Some uniqueness and continuous dependence theorems for nonlinear elastodynamics in exterior domains. **85g:73006**
- Martinson, L. K. The evolution of the support of the solution of a boundary value problem of nonlinear heat conductivity in various regimes of localization. (Russian) **85d:35052**
- Payne, L. E. See Knops, R. J., **85g:73006** and Crooks, P. S., **85j:35189**
- Wang, Ming Liang The stability and uniqueness of the solutions of the initial value problem and the periodic boundary value/initial value problem for the generalized KdV equation. (Chinese. English summary) **85k:35217**
- Yan, Zi Qian Invariant sets and the Hukuhara-Kneser property for parabolic systems. **85j:35087**

## 35B32 Bifurcation

- Craig, Walter A bifurcation theory for periodic solutions of nonlinear dissipative hyperbolic equations. **85e:35018**
- Fujii, Hiroshi (with Nishiura, Yasumasa) Global bifurcation diagram in nonlinear diffusion systems. **85e:35019**
- Hess, Peter On bifurcation and stability of positive solutions of nonlinear elliptic eigenvalue problems. **85a:35014**
- On bifurcation from infinity for positive solutions of second order elliptic eigenvalue problems. **85c:35006**
- Keyfitz, Barbara Lee (with Kuiper, Hendrik J.) Bifurcation resulting from changes in domain in a reaction-diffusion equation. **85e:35020**
- Kuiper, Hendrik J. See Keyfitz, Barbara Lee, **85e:35020**
- Manoranjan, V. S. (with Mitchell, Andrew Roland; Sleeman, B. D.; Yu, Kuo Pen) Bifurcation studies in reaction-diffusion. **85h:35031**
- Mitchell, Andrew Roland See Manoranjan, V. S.; et al., **85h:35031**
- de Mottoni, P. (with Schiaffino, A.) Bifurcation of stable periodic solutions for periodic quasilinear parabolic equations. **85c:35005**
- de Nascimento, Arnaldo Simal Bifurcation of radially symmetric equilibria of a parabolic equation. **85f:35016**
- Nishiura, Yasumasa See Fujii, Hiroshi, **85e:35019**
- Peitgen, H.-O. (with Schmitt, K.) Global analysis of two-parameter elliptic eigenvalue problems. **85f:35017**
- Schiaffino, A. See de Mottoni, P., **85c:35005**
- Schmitt, K. See Peitgen, H.-O., **85f:35017**
- Sleeman, B. D. See Manoranjan, V. S.; et al., **85h:35031**
- Tallaferrro, Steven D. Stability and bifurcation of equilibrium solutions of reaction-diffusion equations on an infinite space interval. **85i:35013**
- Vol'pert, A. I. (with Vol'pert, V. A.) Bifurcation of waves described by parabolic systems. (Russian) **85m:35007**
- Vol'pert, V. A. See Vol'pert, A. I., **85m:35007**
- Yu, Kuo Pen See Manoranjan, V. S.; et al., **85h:35031**

## secondary classifications (35B32)

- Akhromeeva, T. S. (with Malinetskii, G. G.) Two-component systems in the neighborhood of a bifurcation point. Behavior of solutions in small domains. (Russian) **85k:58052**
- Barrow, David L. (with Bates, P. W.) Bifurcation from collinear solutions to a reaction-diffusion system. **85a:35050**
- (with Bates, P. W.) Bifurcation and stability of periodic traveling waves for a reaction-diffusion system. **85f:35112**
- Bates, P. W. See Barrow, David L., **85a:35050** and **85f:35112**
- Brown, K. J. (with Shivaji, R.) Simple proofs of some results in perturbed bifurcation theory. **85a:58016**
- Spatially inhomogeneous steady state solutions for systems of equations describing interacting populations. **85a:35032**
- Chen, Su Shing Crystallographic groups and homogeneous statistical solutions of Navier-Stokes equations. **85g:35096**
- Chossat, P. (with Giraud, J. P.) Calcul des coefficients de bifurcation dans un problème de convection en symétrie sphérique. (English summary) [Computation of the coefficients of bifurcation for the onset of convection in a spherical shell] **85i:76028**
- Coullet, P. (with Spiegel, E. A.) Amplitude equations for systems with competing instabilities. **85c:58074**
- Flandoli, Franco A Riccati equation arising in a boundary control problem for distributed parameters. (Italian summary) **85b:93030**
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- Morro, A. (with Straughan, Brian) Highly unstable solutions to completely nonlinear diffusion problems. 85c:35050
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- Curtain, Ruth F. Finite-dimensional compensators for parabolic distributed systems with unbounded control and observation. 85c:93025
- Iskenderov, A. D. (with Tagiev, R. K.) Problems of optimization with controls in the coefficients of a parabolic equation. (Russian) 85g:49026
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- Bates, P. W. (with Brown, K. J.) Convergence to equilibrium in a reaction-diffusion system. 85b:35033
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- Bertsch, M. (with Peletier, L. A.) A positivity property of solutions of nonlinear diffusion equations. 85k:35110
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- Jaroszewski, Magdalena  $L^{p,q}$  spaces and their application to elliptic partial differential operators. 85j:35055
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- Kamynin, V. L. A priori estimates for solutions of quasilinear parabolic equations in the plane and their applications. (Russian) 85a:35046
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- Krylov, N. V. Degenerate nonlinear elliptic equations. (Russian) 85f:35096 Degenerate nonlinear elliptic equations. II. (Russian) 85f:35097
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- Novrusov, A. A. An approach to the investigation of qualitative properties of solutions of second-order elliptic equations not in divergence form. (Russian) 85i:35047
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### 35B50 Maximum principles

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Del Pace, Carlo (with Papi Frosali, Gloria) Maximum principle and positive eigenfunctions for a quadratic pencil of elliptic operators. (Italian. English summary) 85d:35016

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Kresin, G. I. (with Maz'ya, V. G.) The maximum principle for second-order elliptic and parabolic systems. (Russian) 85f:35031

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### 35B60 Continuation and prolongation [See also 58A15, 58A17, 58Hxx.]

### secondary classifications (35B60)

Hörmander, Lars Uniqueness theorems for second order elliptic differential equations. 85c:35018

Martinez, André Prolongement des solutions holomorphes de problèmes aux limites. (English summary) [Extension of holomorphic solutions of boundary value problems] 85c:35006

### 35B65 Smoothness of solutions

Babin, A. V. Construction and investigation of solutions of differential equations by methods of the theory of approximation of functions. (Russian) 85h:35042

Kohn, Robert V. Partial regularity and the Navier-Stokes equations. 85j:35025

Maugeri, Antonino Partial regularity of the derivatives of order  $(m-1)$  of solutions of quasilinear parabolic systems of order  $2m$  with linear growth. (Italian) 85j:35026

Meier, Michael Liouville theorems, partial regularity and Hölder continuity of weak solutions to quasilinear elliptic systems. 85k:35022

Sjöstrand, J. Analytic wavefront sets and operators with multiple characteristics. 85c:35022

Shubachevskii, A. L. Smoothness of solutions of the first boundary value problem for an elliptic differential-difference equation. (Russian) 85d:35018

Svensson, E. C. Smooth solutions of initial-value problems in regions with corners. 85k:35023

Yamasaki, Masao Régularité microlocale quasi homogène des solutions d'équations aux dérivées partielles non linéaires. (English summary) [Quasihomogeneous microlocal regularity of solutions of nonlinear partial differential equations] 85h:35043

### secondary classifications (35B65)

Allnache, S. (with Métivier, G.) Propagation of analyticity for solutions of nonlinear partial differential equations. 85c:35025

di Benedetto, Emmanuele (with Friedman, Avner) Regularity of solutions of nonlinear degenerate parabolic systems. 85j:35089

Bolley, P. (with Camus, J.; Métivier, G.) Régularité Gevrey et itérée pour une classe d'opérateurs hypoelliptiques. [Gevrey regularity and iterates for a class of hypoelliptic operators] 85h:35058

Camus, J. See Bolley, P.; et al., 85h:35058

Chelkak, S. I. See Koshelev, A. I., 85i:35051

Franchi, Bruno (with Lanconelli, Ermanno) Hölder regularity theorem for a class of linear nonuniformly elliptic operators with measurable coefficients. 85k:35094

Friedman, Avner See di Benedetto, Emmanuele, 85j:35089

Giaquinta, M. (with Giusti, E.) Global  $C^{1,\alpha}$ -regularity for second order quasilinear elliptic equations in divergence form. 85k:35077

Giusti, E. Some aspects of the regularity theory for nonlinear elliptic systems. 85c:35037

See also Giaquinta, M., 85k:35077

Koshelev, A. I. (with Chelkak, S. I.) Regularity of solutions of elliptic systems of higher orders. (Russian) 85i:35051

Lanconelli, Ermanno See Franchi, Bruno, 85k:35094

Mandras, Franco (with Porru, Giovanni) Regularity of the solutions of the Dirichlet problem for elliptic operators of order  $2m$ . (Italian. English summary) 85f:35069

Maugeri, Antonino Partial Hölder regularity for the derivatives of order  $(m-1)$  of solutions of  $2m$  order quasilinear parabolic system with linear growth. 85g:35067

Métivier, G. See Allnache, S., 85c:35025 and Bolley, P.; et al., 85h:35058

Ono, Akira Interior estimates for elliptic partial differential equations in the  $L^{(q,\lambda)}$  spaces of strong type. 85k:35063

Porru, Giovanni See Mandras, Franco, 85f:35069

Sjöstrand, J. Analytic regularity for operators with multiple characteristics. 85k:35008

Sohr, Hermann Zur Regularitätstheorie der instationären Gleichungen von Navier-Stokes. [On the regularity theory of the nonstationary Navier-Stokes equations] 85f:35167

Struwe, M. A counterexample in regularity theory for parabolic systems. 85i:35086

Tolkdorf, Peter Everywhere-regularity for some quasilinear systems with a lack of ellipticity. 85h:35104

Véron, L. Behaviour of solutions of nonlinear elliptic equations near a singularity of codimension 2. 85g:35049

von Wahl, Wolf Extension of a result of Ladyženskaja and Ural'ceva concerning second-order parabolic equations of arbitrary order. 85d:35062

### 35B99 None of the above, but in this section

Berlyand, L. V. (with Chudinovich, I. Yu.) Averaging of boundary value problems for higher-order differential operators in domains with holes. (Russian) 85a:35017

Bondarev, P. A. Application of the averaging method of nonlinear mechanics for solution of new problems encountered in the theory of vibrations of plates. (Russian) (See 85f:00006)

Chau, N. N. Liouville theorems for solutions of partial differential equations. (Russian) 85j:35027

Chudinovich, I. Yu. See Berlyand, L. V., 85a:35017

Gerstein, L. M. Method of the commutant for investigation of new classes of partial differential equations. (Russian) (See 85k:35001)

Kennington, A. U. The inheritance of concavity by solutions of boundary value problems. (See 85g:00024)

Kozlov, S. M. See Zhikov, V. V.; et al., 85k:35024

Kozlova, O. N. Positive solutions of certain degenerate systems of partial differential equations. (Russian) (See 85k:35001)

Lyschenko, A. A. Not almost periodic solutions of S. L. Sobolev's equation. (Russian) 85m:35009

Oleinik, O. A. See Zhikov, V. V.; et al., 85k:35024

Roşculeţ, M. Integral operators that generalize differential equations. VII. Mean value formulas for systems of equations of parabolic type. (Romanian. French summary) 85i:35025

Vu Kim Tuan Dimension of the manifold of solutions of a system of partial differential equations. (Russian) 85f:35032

Wang, Ji Yan (with Zhang, Lu Ping) The  $H_1$  solutions of a class of Fuchs type partial differential equations with differential operator coefficients. (Chinese) 85m:35010

Zhang, Lu Ping See Wang, Ji Yan, 85m:35010

Zhikov, V. V. (with Kozlov, S. M.; Oleinik, O. A.) Averaging of parabolic operators. (Russian) 85k:35024

### secondary classifications (35B99)

Adimurthi, M. (with Srikanth, P. N.) On exact number of solutions at infinity for Ambrosetti-Prodi class of problems. 85k:35084

Andrianov, I. V. (with Koblik, S. G.) Calculation of an orthotropic strip with periodically repeated boundary conditions. (Russian. English summary) 85m:73014

Attouch, Hedy Théorie de la  $\Gamma$ -convergence. Applications à des inéquations variationnelles de la mécanique. [The theory of  $\Gamma$ -convergence. Applications to variational inequalities in mechanics] 85d:49016

Bagotskaya, N. V. Nonessential sets of the Dirichlet problem. (Russian) 85f:35065

Bandle, Catherine Isoperimetric inequalities. 85f:35029

di Benedetto, Emmanuele Continuity of weak solutions to a general porous medium equation. 85c:35010

Berlyand, L. V. Averaging of equations of the linear theory of elasticity in domains with a fine-grained boundary. I. (Russian) 85g:73004

- Averaging of equations of the linear theory of elasticity in domains with a coarse-grained boundary. II. (Russian) **85j:73005**
- Bikchantsev, I. A. Liouville's theorem for generalized analytic functions on an open Riemann surface. (Russian) **85j:30077**
- Caillerie, D. Étude de la conduction stationnaire dans un domaine comportant une répartition périodique d'inclusions minces de grande conductivité. (English summary) [Study of stationary conduction in a domain with a periodic distribution of thin inclusions of high conductivity] **85b:80006**
- Chan Dyk Van Behavior of solutions of boundary value problems for nonlinear equations with coefficients of arbitrary growth with unbounded increase in the order of equations. (Russian) **85b:35089**
- Collins, Clyde Length dependence of solutions of FitzHugh-Nagumo equations. **85d:35059a**
- Diffusion dependence of the FitzHugh-Nagumo equations. **85d:35059b**
- Conca, Carlos Homogénéisation des équations de Stokes et de Navier-Stokes dans des domaines perforés périodiquement avec des conditions aux limites de type Fourier. (English summary) [Homogenization of Stokes and Navier-Stokes equations in periodically perforated domains with boundary conditions of Fourier type] **85j:35120**
- Crandall, Michael G. (with Lions, Pierre-Louis) Solutions de viscosité non bornées des équations de Hamilton-Jacobi du premier ordre. (English summary) [Unbounded viscosity solutions of first-order Hamilton-Jacobi equations] **85k:35044**
- Dawidowicz, Antoni Leon On the existence of an invariant measure for the dynamical system generated by partial differential equation. **85b:56073**
- DiPerna, Ronald J. Convergence of the viscosity method for isentropic gas dynamics. **85i:35118**
- Donato, Patrizia An estimate for the difference of  $H$ -limits and some applications to homogenization problems. (Italian. English summary) **85i:49021**
- Duvaut, G. Homogénéisation et matériaux composites. [Homogenization and composite materials] **85m:73034**
- Estepan, M. J. Compactness results and existence of many solutions of nonlinear elliptic problems in strip-like domains. **85i:35042**
- Gramchev, Todor Stationary phase method in the Gevrey classes and the Gevrey wave front sets. **85j:58086**
- Herrero, Miguel A. (with Vázquez, Juan L.) Propagation properties of the solutions of a nonlinear parabolic equation. (Italian) **85d:35063**
- Hirsch, Morris W. The dynamical systems approach to differential equations. **85m:58060**
- Jerome, Joseph W. Analysis of nonlinear elliptic systems arising in reaction/diffusion modeling. **85k:35079**
- John, Fritz Formation of singularities in elastic waves. **85h:73018**
- Jönsson, T. Hedgehogs in a three-dimensional anisotropic spin system. **85k:82017**
- Kawohl, B. A geometric property of level sets of solutions to semilinear elliptic Dirichlet problems. **85f:35083**
- Koblik, S. G. See Andrianov, I. V., **85m:73014**
- Lions, Pierre-Louis See Crandall, Michael G., **85k:35044**
- Lu, Zhu Jia Discrete phenomena in the existence of solutions of the Goursat problem for equations with multicharacteristics. (Chinese) **85h:35010**
- Majda, Andrew The existence of multidimensional shock fronts. **85f:35139**
- Mascarenhas, Maria Luisa A linear homogenization problem with time dependent coefficient. **85c:45002**
- McCoy, Peter A. Best approximation of solutions to a class of elliptic partial differential equations. **85f:35043**
- Noussair, Essat S. (with Swanson, Charles A.) Global positive solutions of semilinear elliptic equations. **85h:35093**
- Oleinik, O. A. (with Shamaev, A. S.; Yosifian, Gregori) Problèmes d'homogénéisation pour le système de l'élasticité linéaire à coefficients oscillant non-uniformément. (English summary) [Problems of homogenization for linear elasticity systems with nonuniformly oscillating coefficients] **85c:73051**
- Panasenko, G. P. Averaging of processes in skeletal structures with random properties. (Russian) **85e:35130**
- Robinson, Allen Conrad (with Saffman, P. G.) Stability and structure of stretched vortices. **85m:76022**
- Saffman, P. G. See Robinson, Allen Conrad, **85m:76022**
- Shamaev, A. S. See Oleinik, O. A.; et al., **85c:73051**
- Sirazhudinov, M. M.  $G$ -convergence and averaging of some higher-order nondivergence elliptic operators. (Russian) **85j:35056**
- Srikanth, P. N. See Adimurthi, M., **85k:35084**
- Swanson, Charles A. See Noussair, Essat S., **85h:35093**
- Tervo, Jouko Zur Theorie der koerziven linearen partiellen Differentialoperatoren. [On the theory of coercive linear partial differential operators] **85f:35052**
- Vázquez, Juan L. See Herrero, Miguel A., **85d:35063**
- Vishnevskii, M. P. Integral sets of nonlinear parabolic systems. (Russian) **85f:35110**
- Yosifian, Gregori See Oleinik, O. A.; et al., **85c:73051**
- Ziemer, William P. Mean values of subsolutions of elliptic and parabolic equations. **85j:35040**

### 35Cxx Representations of solutions

secondary classifications (35Cxx)

- Brackx, F. (with Delanghe, Richard; Sommen, F.) ★ Clifford analysis. **85j:30103**
- Buchanan, James L. See Gilbert, R. P., **85d:35035**
- Delanghe, Richard See Brackx, F.; et al., **85j:30103**
- Gilbert, R. P. (with Buchanan, James L.) ★ First order elliptic systems. **85d:35035**
- Naas, Josef (with Tutschke, Wolfgang) Complex methods in nonlinear analysis. **85j:30097**
- Sommen, F. See Brackx, F.; et al., **85j:30103**
- Tutschke, Wolfgang ★ Partielle Differentialgleichungen. (German) [Partial differential equations] **85h:35001**
- See also Naas, Josef, **85j:30097**

### 35C05 Solutions in closed form

- Aleksandrovich, I. N. See Pakhareva, N. A., **85j:35029**
- Bauer, K. W. Riemannfunktionen und Differentialoperatoren. (English and Russian summaries) [Riemann functions and differential operators] **85f:35033**
- Cheng, Hung An exactly solvable nonlinear partial differential equation with solitary-wave solutions. **85f:35034**
- Dağ, İhsan An initial value problem for an equation of Helmholtz type with  $m$  singular coefficients. (Turkish summary) **85f:35035**
- Haqae, S. M. A. The summation of some infinite series arising out of the solution of a partial differential equation. **85j:35028**
- Maslennikova, O. V. Quasipolynomial solutions of the generalized viscoelasticity equation with matrix-vector operators. (Russian) **85k:35025**
- Pakhareva, N. A. (with Aleksandrovich, I. N.) Representation of  $p^{\nu}$ -wave functions in terms of wave functions. (Russian) **85j:35029**
- Pochinailko, M. D. Exact solutions of some spatially two-dimensional nonlinear equations. (Russian) **85f:35036**
- Sharipov, B. Integrability in quadratures of a system in total differentials with one unknown function of three independent variables. (Russian. Tajiki summary) **85f:35037**

secondary classifications (35C05)

- Calogero, F. A solvable nonlinear wave equation. **85f:35170**
- Cornille, H. (with Gervois, A.) Bi-solitons for a class of nonlinear equations with quadratic nonlinearity. I, II. **85f:35171**
- Enol'skiĭ, V. Z. On the solutions in elliptic functions of integrable nonlinear equations. **85e:58064**
- Gervois, A. See Cornille, H., **85f:35171**
- Kawahara, Takuji (with Tanaka, Mitsuhiro) Interactions of traveling fronts: an exact solution of a nonlinear diffusion equation. **85c:35045**
- Kreyszig, Erwin On the construction of a class of Bergman kernels for partial differential equations. **85c:35009**
- Lanckau, E. On the representation of Bergman-Vekua-operators for three-dimensional equations. (German and Russian summaries) **85k:35029**
- Pederson, R. N. Explicit formulas for complementary boundary operators of linear elliptic problems. I. The half-space case. **85e:35036**
- Simmonds, J. G. Closed-form, axisymmetric solution of the von Kármán plate equations for Poisson's ratio one-third. **85c:73040**
- Tanaka, Mitsuhiro See Kawahara, Takuji, **85c:35045**

### 35C10 Series solutions, expansion theorems

- Abramowicz, J. Some applications of generalized exponentials to partial differential equations. **85f:35038**
- Bengel, G. Convergence of formal solutions of singular partial differential equations. **85h:35044**
- Brasler-Smith, P. R. On the limitations of spherical harmonics for the solution of Laplace's equation. **85h:35045**
- Canak, Milot Systeme von Differentialgleichungen erster Ordnung vom elliptischen Typus mit analytischen Koeffizienten und Methode der verallgemeinerten areolären Reihen. [Systems of first-order differential equations of elliptic type with analytic coefficients and method of generalized areolar series] **85b:35005**
- Doha, E. H. On the solution of the heat equation in Chebyshev series. **85h:35046**
- Dzhurav, A. Some new mixed problems. (Russian) **85h:35047**
- Goman, O. G. Representation of nonaxisymmetric self-similar solutions of the wave equation in terms of analytic functions. (Russian. English summary) **85k:35026**
- Kascha, G. S. ★ О сходимости разложения функции непрерывного спектра по системе резонансных функций. (Russian) [The convergence of expansions of functions of a continuous spectrum in a system of resonance functions] **85i:35026**
- Kothari, L. S. See Singh, G. S., **85c:35008**
- Morozov, A. V. Quasipolynomial solution of an inhomogeneous partial differential equation. (Russian) **85k:35027**
- Singh, G. S. (with Kothari, L. S.) On the solution of the two-dimensional Helmholtz equation. **85c:35008**

secondary classifications (35C10)

- Adomian, George A. A new approach to nonlinear partial differential equations. **85j:35199**
- Banks, W. H. H. Similarity solutions of the boundary-layer equations for a stretching wall. (French summary) **85b:76022**
- Chen, Ren Zhao Series solutions of a class of integro-differential equations, and their application to population problems. (Chinese. English summary) **85h:92032**
- Filar, Maria (with Musialek, Jan) Boundary value problems for the Poisson equation in the unbounded  $n$ -dimensional layer ( $n \geq 4$ ). **85j:35049**
- Firmani, Bruno Conditions for the regularity of the solution of the Dirichlet problem for a second-order hyperbolic equation. (Italian. English summary) **85b:35037**
- Haqae, S. M. A. The summation of some infinite series arising out of the solution of a partial differential equation. **85j:35028**
- Ho, H.-S. A general solution method to the interactive boundary value problems of linear differential systems. **85b:73036**
- Ismatov, M. Solvability of some nonclassical mixed problems. (Russian. Tajiki summary) **85c:35013**
- On the well-posedness of some mixed problems for a differential equation of order  $2m$ . (Russian. Tajiki summary) **85c:35014**
- Miller, Robert F. On the completeness of sets of solutions to the Helmholtz equation. **85i:35037**
- Musialek, Jan See Filar, Maria, **85j:35049**
- (Su, Bu Qing) See Ho, H.-S., **85b:73036**



## 35C15 Integral representations

- Aronsson, Gunnar On certain singular solutions of the partial differential equation  $u_{xx}^2 + 2u_x u_{xy} + u_y^2 = 0$ . 85m:35011
- Bergles, Peter On the representation of the Riemann function by differential operators. (Serbo-Croatian summary) 85k:35028
- Dobrushkin, V. A. (with Podkopaev, P. A.) Representation of the solution of boundary value problems for the heat equation in the form of a continual integral with respect to a Wiener measure. (Russian. English summary) 85h:35048
- Florian, Helmut (with Pügel, Jürgen; Wallner, Herbert) ★ Über die Riemannfunktion für Gleichungen höherer Ordnung. (German) [On the Riemann function for higher-order equations] 85e:35023a
- (with Pügel, Jürgen; Wallner, Herbert) ★ Darstellungen von Riemannfunktionen für  $(\partial^2 w / \partial x_1 \partial x_2 \dots \partial x_n) + C(x_1, x_2, \dots, x_n)w = 0$ . (German) [Representations of Riemann functions for  $(\partial^2 w / \partial x_1 \partial x_2 \dots \partial x_n) + C(x_1, x_2, \dots, x_n)w = 0$ ] 85e:35023b
- Kreyszig, Erwin On the construction of a class of Bergman kernels for partial differential equations. 85e:35009
- Kushit'skii, Ya. S. Refined formulas for Poisson kernels of an elliptic boundary value problem in a half space. (Russian) 85b:35006
- Lascha, E. Bergman'sche Integraloperatoren für stationäre Prozesse in der Ebene. (English and Russian summaries) [Bergman integral operators for nonstationary processes in the plane] 85i:35027
- On the representation of Bergman-Vekua-operators for three-dimensional equations. (German and Russian summaries) 85k:35029
- Li, Wen Ke The fundamental solution of a class of second-order systems of linear partial differential equations. (Chinese. English summary) 85f:35039
- Miyatake, Sadao Integral representation of solutions for equations of mixed type in a half space. 85i:35028
- Podkopaev, P. A. See Dobrushkin, V. A., 85h:35048
- Pügel, Jürgen See Florian, Helmut; et al., 85e:35023a and 85e:35023b
- Ramm, A. G. Representation of solutions to Helmholtz's equation. 85j:35030
- Rogulev, M. Integral operator associated with a partial differential equation of any order, with constant coefficients and any number of variables. (Romanian. French summary) 85b:35007
- Saitoh, Saburo Integral transforms in linear equations of parabolic type with constant coefficients. 85k:35030
- Sjögren, Peter On the maximal function for the Mehler kernel. 85j:35031
- Wallner, Herbert See Florian, Helmut; et al., 85e:35023a and 85e:35023b

secondary classifications (35C15)

- Angell, T. S. (with Kleinman, R. E.) Modified Green's functions and the third boundary value problem for the Helmholtz equation. 85c:35015
- Costabel, Martin Boundary integral operators on curved polygons. 85m:44001
- Ermentrout, G. B. See Kopell, N., 85d:92009
- Głowinski, Jan On some boundary value problems for the equation  $(\Delta - c^2)u = 0$  in a half-space. 85c:35016
- Jerison, David S. (with Kenig, Carlos E.) Boundary value problems on Lipschitz domains. 85f:35057
- Karachun, V. Ya. See Ovsienko, V. G., 85h:35059
- Kenig, Carlos E. See Jerison, David S., 85f:35057
- Kleinman, R. E. See Angell, T. S., 85c:35015
- Kopell, N. (with Ermentrout, G. B.) Coupled oscillators and mammalian small intestines. 85d:92009
- Koslova, O. N. Integral representation of positive solutions of parabolic systems with a Bessel operator. (Russian) 85c:35039
- Li, Ming Zhong On skew derivative problem for second order elliptic systems on the plane. 85h:35078
- Liu, Jia Pei On regular solutions of the Euler-Poisson-Darboux equation in a neighborhood of a singular line. (Chinese. English summary) (Not in MR)
- Miller, Robert F. The analytic Cauchy problem for fourth order elliptic equations in two independent variables. 85k:35070
- Ovsienko, V. G. (with Karachun, V. Ya.) A mixed initial-boundary value problem of heat conduction in a cylindrical layer. (Russian) 85h:35059
- Ramkisson, H. Integral representations in hydrodynamics. 85b:76021
- Rogulev, M. Opérateurs intégraux qui généralisent les équations différentielles. Formules de moyennes pour une classe d'équations aux dérivées partielles du type parabolique. [Integral operators that generalize differential equations. Averaging formulas for a class of parabolic partial differential equations] 85h:47055
- Schilts, D. (with Vaillant, J.; Wagschal, Claude) Problème de Cauchy ramifié: racine caractéristique double ou triple en involution. [The ramified Cauchy problem: double or triple characteristic root in involution] 85e:35007
- Vaillant, J. See Schilts, D.; et al., 85e:35007
- Wagner, Peter Parameterintegration zur Berechnung von Fundamentallösungen. [Parameter integration for the computation of fundamental solutions] 85j:35041
- Wagschal, Claude Problème de Cauchy ramifié à caractéristiques multiples holomorphes de multiplicité variable. [Ramified Cauchy problem with multiple holomorphic characteristics of variable multiplicity] 85e:35008
- See also Schilts, D.; et al., 85e:35007

## 35C20 Asymptotic expansions

- Bogatyyev, S. V. Asymptotics of solutions of a singularly perturbed parabolic equation. (Russian) 85h:35049
- Costabel, Martin (with Stephan, E.) Curvature terms in the asymptotic expansions for solutions of boundary integral equations on curved polygons. 85f:35040
- Dobrokhotov, S. Yu. (with Maslov, V. P.) Multiphase asymptotics of nonlinear partial differential equations with a small parameter. 85j:35032
- Fedotov, I. A. See Volosov, K. A., 85a:35019
- Felgenhauer, Andreas See Goering, Herbert; et al., 85i:35029

- Gao, Ru Xi Uniformly valid solutions of problems with a turning point. (Chinese. English summary) 85j:35033
- Goering, Herbert (with Felgenhauer, Andreas; Lube, Gert; Roos, Hans-Görg; Tobiska, Lutz) ★ Singularly perturbed differential equations. 85i:35029
- Iosif'yan, G. A. See Oleinik, O. A.; et al., 85g:35022
- Kadykhanov, B. M. Asymptotic expansion of the solution of a singularly perturbed mixed problem with a large initial velocity for hyperbolic equations with incomplete degeneration. (Russian) 85j:35034
- Kalyakin, L. A. Long-wave asymptotics of the solution of a hyperbolic system of equations. (Russian) 85k:35031
- Li, Zhi Shen Uniform asymptotic expansions of solution for the reduced wave equation at a cusped caustic. 85j:35035
- Lube, Gert See Goering, Herbert; et al., 85i:35029
- Maslov, V. P. See Dobrokhotov, S. Yu., 85j:35032
- Medenkov, E. U. Asymptotic behavior of the solution of a singularly perturbed problem with initial jump. (Russian) 85h:35060
- Murata, Minoru Asymptotic expansions in time for solutions of Schrödinger-type equations. 85d:35019
- Nazarov, S. A. Asymptotics at infinity of the solution of the Neumann problem with conjugacy conditions in an angle. (Russian) 85k:35032
- Oleinik, O. A. (with Panasenko, G. P.; Iosif'yan, G. A.) Homogenization and asymptotic expansions for solutions of the elasticity system with rapidly oscillating periodic coefficients. 85g:35022
- Panasenko, G. P. See Oleinik, O. A.; et al., 85g:35022
- Pryashinskii, V. I. Principal terms of the asymptotic expansion on a wave of rarefaction for a model equation of gas dynamics. (Russian) 85a:35018
- Roos, Hans-Görg See Goering, Herbert; et al., 85i:35029
- Stephan, E. See Costabel, Martin, 85f:35040
- Tahara, Hidetoshi Asymptotic expansions of solutions of Fuchsian hyperbolic partial differential equations. 85j:35036
- Tobiska, Lutz See Goering, Herbert; et al., 85i:35029
- Tsimbal, V. M. Asymptotic solution of a mixed problem for a hyperbolic equation with a parameter. (Ukrainian. Russian summary) 85g:35023
- The Cauchy problem for a singularly perturbed hyperbolic equation. (Ukrainian. Russian summary) 85h:35051
- Vainberg, B. R. ★ Асимптотические методы в уравнениях математической физики. (Russian) [Asymptotic methods in equations of mathematical physics] 85k:35033
- Virchenko, N. A. Asymptotic representations of the solutions of certain boundary value problems for a singular wave equation. (Russian) (See 85f:00005)
- Volosov, K. A. (with Fedotov, I. A.) Asymptotic representations of the solution of a quasilinear parabolic equation in the vicinity of a front. (Russian) 85a:35019

secondary classifications (35C20)

- Asiz, Abdul (with Na, T. Y.) ★ Perturbation methods in heat transfer. 85k:80003
- Benson, Donald C. A Prüfer transformation for Liénard's equation. 85k:34068
- Bleistein, Norman ★ Mathematical methods for wave phenomena. 85j:35001
- Bondareva, I. N. The Korteweg-de Vries equation in classes of growing functions with a given asymptotic behavior as  $|x| \rightarrow \infty$ . (Russian) 85h:35180
- Bouther, M. Comparison of the matched asymptotic expansions method and the two-variable technique. 85j:76015
- Callias, Constantine J. (with Uhlmann, Gunther A.) Singular asymptotics approach to partial differential equations with isolated singularities in the coefficients. 85i:35116
- Dobrokhotov, S. Yu. Maslov's methods in the linearized theory of gravitational waves on a liquid surface. (Russian) 85h:58125
- Gorshkova, O. N. See Vasil'eva, A. B., 85h:35109
- Grundy, R. E. Local similarity solutions for the initial value problem in nonlinear diffusion. 85f:35106
- Guseinov, G. M. A mixed problem for a parabolic equation degenerating into a parabolic one. (Russian. English and Azerbaijani summaries) 85h:35127
- Höegh-Krohn, R. See Holden, Helge; et al., 85f:81016
- Holden, Helge (with Höegh-Krohn, R.; Johannesen, S.) The short range expansion. 85f:81016
- Hsiao, George C. (with Weinacht, Richard J.) Singular perturbations for a semilinear hyperbolic equation. 85k:35015
- Jiang, Fu Ru On the uniformly valid asymptotic solution of nonlinear Dirichlet problem. 85e:35049
- Johannesen, S. See Holden, Helge; et al., 85f:81016
- Khoma, G. P. See Mitropol'skii, Yu. A., 85e:00032
- Laver, A. G. Periodic solutions of certain nonlinear singularly perturbed parabolic equations. (Russian. English summary) 85f:35115
- (with Sidenko, N. R.) Asymptotic behavior of the solution of a time-periodic boundary value problem for a singularly perturbed nonlinear parabolic equation with rapidly oscillating coefficients. (Russian) 85i:35011
- Li, Zhi Shen Asymptotic solution of a system of hyperbolic partial differential equations near a cusped caustic. (Chinese. English summary) 85f:35134
- Maslov, V. P. (with Omel'yanov, G. A.; Tsupin, V. A.) Asymptotic behavior of certain differential, pseudodifferential and dynamical systems with small dispersion. (Russian) 85c:35081
- Mas'ya, V. G. (with Nazarov, S. A.; Plamenevskii, B. A.) Singularities of solutions of the Dirichlet problem in the exterior of a thin cone. (Russian) 85h:35074
- Mitropol'skii, Yu. A. (with Khoma, G. P.) ★ Математическое обоснование асимптотических методов нелинейной механики. (Russian) [Mathematical justification of asymptotic methods of nonlinear mechanics] 85e:00032
- Na, T. Y. See Asiz, Abdul, 85k:80003
- Nazarov, S. A. See Mas'ya, V. G.; et al., 85h:35074
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- Pryashinskii, V. I. (with Sushko, V. G.) Small-parameter asymptotics of the solutions of some boundary value problems for the Burgers equation. (Russian) 85k:35213
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- Sushko, V. G. See Pryashinskii, V. I., 85k:35213
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- Uhlmann, Gunther A. See Callias, Constantine J., 85i:35116
- Uroev, V. M. Singularities of a solution of an initial-boundary value problem for a vibrating-plate equation near the boundary. (Russian) 85f:73070
- Vasil'eva, A. B. Periodic solutions of equations of parabolic type with small parameters. (Russian) 85g:35021
- (with Gorshkova, O. N.) A singularly perturbed problem of chemical kinetics. (Russian) 85h:35109
- Weinacht, Richard J. See Haiso, George C., 85k:35015
- Yanson, Z. A. Asymptotic behavior of solutions of the Helmholtz equation in a region of caustic shadow. I. (Russian. English summary) 85f:35082
- 35C99 None of the above, but in this section
- Bartsch, Ingeborg Über die Differentialgleichung  $\sum_{k=0}^n c_k (D_1 + aD_2)^k U = 0$ . (English, French and Russian summaries) [On the differential equation  $\sum_{k=0}^n c_k (D_1 + aD_2)^k U = 0$ ] (Not in MR)
- Berger, Marc Aron (with Sloan, Alan D.) Explicit solutions of partial differential equations. 85f:35041
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- Carroll, Robert Wayne On the canonical development of Parseval formulas for singular differential operators. (Italian summary) 85i:35030
- Dedushiev, A. V. Application of the Fourier method to the solution of a mixed problem in the case of a nonselfadjoint operator. (Russian) 85k:35034
- Dresner, Lawrence ★ Similarity solutions of nonlinear partial differential equations. 85g:35024
- Kozlov, E. A. See Moiseev, E. I.; et al., 85a:35020
- Lavrent'ev, M. M. Interior problems for differential equations. (Russian) (See 85e:00013)
- van der Linden, J. See Nijhoff, F. W.; et al., 85b:35008
- Makovetskii, V. I. Correction: "Fundamental solution of the wave equation with velocity linearly dependent on one argument" [Dokl. Akad. Nauk SSSR 266 (1982), no. 3, 585-586; MR 84e:35035]. (Russian) 85f:35042
- McCoy, Peter A. Best approximation of solutions to a class of elliptic partial differential equations. 85f:35043
- Miller, Willard, Jr. The technique of variable separation for partial differential equations. 85e:35024
- Moiseev, E. I. (with Tikhomirov, V. V.; Kozlov, E. A.) A mean value formula for the regular solution of a hyperbolic equation. (Russian) 85a:35020
- Nijhoff, F. W. (with Quispel, G. R. W.; van der Linden, J.; Capel, H. W.) On some linear integral equations generating solutions of nonlinear partial differential equations. 85b:35008
- Nikolaev, A. G. See Protasenko, V. S., 85b:35052
- Peters, J. M. H. Some traditional approaches to the solution of Helmholtz's equation in spherical coordinates. 85f:35044
- Protasenko, V. S. (with Nikolaev, A. G.) Re-expansion formulas for solutions of the Laplace equation in spherical and elongated spheroidal coordinates. (Russian. English summary) 85b:35052
- Püngel, Jürgen Zur Darstellung von Lösungen einer Klasse linearer partieller Differentialgleichungen. (English and Italian summaries) [On the representation of solutions of a class of linear partial differential equations] 85j:35037
- Quispel, G. R. W. See Nijhoff, F. W.; et al., 85b:35008
- Rosendorn, E. R. Some classes of particular solutions of the equation  $z_{xx} z_{yy} - z_{xy}^2 + \alpha \nabla z = 0$  and their application to problems of meteorology. (Russian) 85f:35045
- Schmidt, Adam Zur "Differentialgleichung"  $(\partial/\partial y)S = T$  im Bereich der Distributionen. (English, French and Russian summaries) [On the "differential equation"  $(\partial/\partial y)S = T$  in the domain of distributions] (Not in MR)
- Sloan, Alan D. See Berger, Marc Aron, 85f:35041
- Tikhomirov, V. V. See Moiseev, E. I.; et al., 85a:35020
- Tiwari, A. K. On spaces of type  $LH_{\alpha,\mu}$ . 85k:35035

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- Andrianov, I. V. (with Koblik, S. G.) Calculation of an orthotropic strip with periodically repeated boundary conditions. (Russian. English summary) 85m:73014
- Andrianova, R. A. (with Finkel', L. A.) The residue method of solution of operator-differential equations. (Russian) 85a:34034
- Ben Arous, G. (with Kusuoka, Shigeo; Stroock, Daniel W.) The Poisson kernel for certain degenerate elliptic operators. 85k:35093
- Bergles, Peter Characterization of certain differential operators in the representation of pseudo-analytic functions. (Italian summary) 85h:30059
- Brihaye, Y. (with Rossi, Paolo) On the one-link integrals over compact groups. 85k:81148
- Carroll, Robert Wayne Partial differential equation techniques in transmutation. 85j:35202
- (with Dolzycki, Stanley) Transmutation as a minimizing procedure. 85c:34021
- Chen, Hua (with Wang, Wei Ke) The analytical solution of a class of Fuchsian-type partial differential equations with operator coefficients. (Chinese. English summary) 85a:35006
- Chikwendu, S. C. Fourier transform perturbation solution of elliptic equations with small nonlinearities. 85a:35035
- Cornille, H. On a class of nonintegrable equations in 1 + 1 dimensions with factorized associated linear operators. 85b:35187
- Degasperis, A. Solvable linear PDEs associated with the isospectral evolution of differential operators. 85h:35188
- Dolzycki, Stanley See Carroll, Robert Wayne, 85c:34021
- Dong, Ming De New method of solving Lamé-Helmholtz equation and ellipsoidal wave functions. 85m:35008
- Evans, Lawrence C. Some min-max methods for the Hamilton-Jacobi equation. 85b:35009
- Făciu, Cristian Riemann and Goursat problems for one-dimensional classical plasticity. 85c:73019
- Finkel', L. A. See Andrianova, R. A., 85a:34034
- Gajewski, Herbert On a first order partial differential equation with nonlocal nonlinearity. 85h:35016
- Gavelya, S. P. (with Mamoshin, V. N.; Reutskii, S. S.) Efficiency of the numerical solution of applied problems of mathematical physics by means of potential representations. (Russian) 85c:65006
- Gorbachuk, M. L. See Gorbachuk, V. I., 85m:42002
- Gorbachuk, V. I. (with Gorbachuk, M. L.) Trigonometric series, generalized periodic functions and boundary value problems of mathematical physics. (Russian) 85m:42002
- Grinberg, G. A. On a possible method of approach to the solution of the biharmonic equation  $\Delta^2 w = \Phi$  under different boundary conditions at the boundary of a plane or spatial domain. (Russian) 85i:73006a
- Correction: "On a possible method of approach to the solution of the biharmonic equation  $\Delta^2 w = \Phi$  under different boundary conditions at the boundary of a plane or spatial domain". (Russian) 85i:73006b
- de Groen, Pieter P. N. Eigenvalues of singularly perturbed problems: reduction to elliptic operators. 85j:73015
- Holm, Darryl D. (with Logan, J. David) Self-similar detonation waves. 85c:76058
- Iwaniec, T. On Cauchy-Riemann derivatives in several real variables. 85c:30032
- Kalinowski, M. W. On the old-new method of solving nonlinear equations. 85i:35005
- Kalla, S. L. (with Villalobos, Alfredo) On a new integral transform. II. (Spanish) 85d:44004
- Kapshivyl, A. A. (with Lomonos, L. N.; Stoyan, N. N.) The second fundamental problem of the axisymmetric stressed state of a space with two spherical cavities. (Russian. English summary) 85f:73016
- Khatlashvili, G. M. (with Kuchaidze, V. G.) A singular solution of the heat equation. (Russian) 85b:80007
- Kleinman, R. E. (with Roach, G. F.; Ström, S. E. G.) The null field method and modified Green functions. 85j:76038
- Koblik, S. G. See Andrianov, I. V., 85m:73014
- Kovalev, V. F. (with Mel'nichenko, I. P.) Biharmonic algebras and the geometry of the domain of a boundary value problem. (Russian. English summary) 85c:31005
- Kuchaidze, V. G. See Khatlashvili, G. M., 85b:80007
- Kusuoka, Shigeo See Ben Arous, G.; et al., 85k:35093
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- Logan, J. David See Holm, Darryl D., 85c:76058
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- Lu, Zhu Jia Discrete phenomena in the existence of solutions of the Goursat problem for equations with multicharacteristics. (Chinese) 85h:35010
- Mamoshin, V. N. See Gavelya, S. P.; et al., 85c:65006
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- Mitropol'skii, Yu. A. (with Samoilenko, V. Gr.) Single-frequency oscillations in systems with several degrees of freedom and time lag. (Russian) 85c:70021
- Newman, Thomas G. Geometric methods in dynamic image processing. (See 85i:00011)
- Palamodov, V. P. Some singular boundary value problems for partial differential equations. (Russian) 85m:58176
- Polynskii, E. A. Approximation of the solution of the Helmholtz equation by the solution of an equation of Schrödinger type. (Russian) 85b:35004
- Reutskii, S. S. See Gavelya, S. P.; et al., 85c:65006
- Roach, G. F. See Kleinman, R. E.; et al., 85j:76038
- Rossi, Paolo See Brihaye, Y., 85k:81148
- Rosenblyum, A. V. (with Rosenblyum, L. V.) A class of orthogonal polynomials of several variables. (Russian) 85d:42023
- Rosenblyum, L. V. See Rosenblyum, A. V., 85d:42023
- Ruschewy, St. (with Singh, Vikramaditya) Some inequalities for starlike functions. 85m:30008
- Sachs, Robert L. Completeness of derivatives of squared Schrödinger eigenfunctions and explicit solutions of the linearized KdV equation. 85b:35060
- Samoilenko, V. Gr. See Mitropol'skii, Yu. A., 85c:70021
- Shidfar, Abdullah Transformation of a biharmonic function from  $r^2$ -form to  $z$ -form and vice versa in representation of a biharmonic function in terms of two harmonic functions. 85d:31013
- Singh, Vikramaditya See Ruschewy, St., 85m:30008
- Skorobogat'ko, V. Ya. Ideas and results of the theory of branching continued fractions and their application to the solution of differential equations. (Russian) 85m:34027
- Solikhov, O. Differential equations for an improper integral. (Russian. Tajiki summary) 85f:58117
- Stefănescu, Doru Algebraic methods for finding instantons. 85j:12007
- Stoyan, N. N. See Kapshivyl, A. A.; et al., 85f:73016
- Ström, S. E. G. See Kleinman, R. E.; et al., 85j:76038
- Stroock, Daniel W. See Ben Arous, G.; et al., 85k:35093
- Struppa, Daniele Carlo The fundamental principle for systems of convolution equations. 85h:46062
- Su, Yu Cheng ★ Qi yi shedongzhongde bianjie ceng jiaoshenfa. (Chinese) [Boundary layer correction methods for singular perturbations] 85c:35016
- Szmydt, Zofia (with Ziemian, Bogdan) Fundamental solution for operators preserving a quadratic form. 85j:35113
- Tahiri, E. Analytic linearization of the Korteweg-de Vries equation. 85g:35108
- Tagami, Yukiko Exact solution of some nonlinear evolution equations. 85h:35210
- Tungatarov, A. A generalized Cauchy-Riemann system with a finite number of singular points. (Russian) 85j:30088

- Usenetashvili, M. A. A boundary value problem for the Holmgren equation in an unbounded domain. (Russian) **85k:35099**
- Villalobos, Alfredo. See Kalla, S. L., **85d:44004**
- Wang, Wei Ke. See Chen, Hua, **85a:35008**
- Wen, Guo Chun. Function theoretic methods for nonlinear elliptic complex equations. **85f:35007**
- Winternitz, P. Lie groups and solutions of nonlinear differential equations. **85k:58090**
- Xiong, Xi Jin. Generalized solutions in the sense of L. Bers for a class of systems of mixed linear partial differential equations. (Chinese)
- Zhukova, T. M. Absorbing boundary conditions for the wave equation. (Russian) (Not in MR)
- Ziemian, Bogdan. See Samydt, Zofia, **85j:35113**

### 35Dxx Generalized solutions

secondary classifications (35Dxx)

- Dahlberg, Bjorn E. J. (with Kenig, Carlos E.) Nonnegative solutions of the porous medium equation. **85j:35090**
- Kenig, Carlos E. See Dahlberg, Bjorn E. J., **85j:35090**

### 35D05 Existence of generalized solutions

- Brüll, Ludger. On the existence theory for nonlinear Schrödinger and wave equations without Lipschitz-estimates. **85k:35036**
- Éidel'man, S. D. See Porper, F. O., **85h:35053**
- Porper, F. O. (with Éidel'man, S. D.) Corollaries of two-sided estimates of weak fundamental solutions to parabolic equations. (Russian. English summary) **85h:35053**

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- Ahmed, N. U. Generalized solutions via integral equations for quasilinear nonhomogeneous parabolic boundary value problems and their stochastic versions. **85h:35123**
- Bern, Zbigniew. Existence of a generalized solution in thermoelasticity with two relaxation times. II. **85c:73074**
- Gasanov, M. G. Initial-boundary value problem for a nonlinear parabolic-hyperbolic system of equations. (Russian. English and Azerbaijani summaries) **85f:35053**
- Gawinecki, Jerry. Existence and uniqueness of the solution of the third boundary-initial value problem for thermal stresses equations of classical and generalized thermomechanics. (Russian summary) **85b:73046**
- Golse, François (with Perthame, Benoît). Existence globale d'une solution généralisée pour les équations du transfert radiatif. (English summary) [Global existence of a generalized solution for radiative transfer equations] **85m:45012**
- Guo, Bo Ling. Initial-boundary value problem for one class of system of multidimensional nonlinear Schrödinger equations with wave operator. **85a:35083**
- Kinoshta, N. (with Mura, T.) Eigenstrain problems in a finite elastic body. **85h:73014**
- Kroemer, Dietmar (with Luckhaus, Stephan). Flow of oil and water in a porous medium. **85k:35211**
- Kufner, Alois (with Opic, Bohumír). The Dirichlet problem and weighted spaces. I. (Russian summary) **85j:35057**
- Luckhaus, Stephan. See Kroemer, Dietmar, **85k:35211**
- Maksimova, M. I. Existence of a weak solution of a parabolic initial-boundary value problem in an unbounded domain in a class of rapidly increasing functions. (Russian. English summary) **85g:35063**
- Mura, T. See Kinoshta, N., **85h:73014**
- Nguyễn Phùng Cát. On some quasilinear elliptic boundary value problems with conditions at infinity. **85j:35075**
- Opic, Bohumír. See Kufner, Alois, **85j:35057**
- Orasov, M. B. Saint-Venant's principle for equations of steady oscillations of an elastic semicylinder. (Russian) **85h:73008**
- Perthame, Benoît. See Golse, François, **85m:45012**
- Shubin, M. A. Essentiality of the spectrum of pseudodifferential operators in the Besicovitch space  $B^2(\mathbb{R}^n)$ . (Russian. English summary) **85b:47056**
- Soma, D. Existenz einer schwachen Lösung eines entarteten parabolischen Rand-Anfangswertproblems zwischen schwachen Ober- und Unterlösungen. (English and Russian summaries) [Existence of a weak solution of a degenerate parabolic initial-boundary value problem between weak upper and lower solutions] **85k:35123**
- Vásquez, Juan L. On a semilinear equation in  $\mathbb{R}^2$  involving bounded measures. **85c:35023**

### 35D10 Regularity of generalized solutions

- Avena, N. (with De Ruvo, T.) Some removable singularity theorems for weak solutions of quasielliptic nonlinear equations. (Italian. English summary) **85g:35025**
- di Benedetto, Emmanuele. Continuity of weak solutions to a general porous medium equation. **85c:35010**
- De Ruvo, T. See Avena, N., **85g:35025**
- Meyer, Michael. Removable singularities for weak solutions of quasilinear elliptic systems. **85a:35021**
- Nutschidze, D. V. Behavior of solutions of higher-order parabolic equations in the neighborhood of a boundary point and at infinity. (Russian) **85j:35033**

secondary classifications (35D10)

- Benabidallah, Abdelkader (with Khelifa, Salim). Existence d'une solution faible des équations d'Euler dans un ouvert convexe borné de  $\mathbb{R}^2$ . (English summary) [Existence of a weak solution of Euler equations in a bounded convex open  $\mathbb{R}^2$  set] **85c:35096**
- di Benedetto, Emmanuele.  $C^{1+\alpha}$  local regularity of weak solutions of degenerate elliptic equations. **85d:35037**
- Franchi, Bruno (with Lanconelli, Ermanno). De Giorgi's theorem for a class of strongly degenerate elliptic equations. (Italian summary) **85b:35018**
- Khelifa, Salim. See Benabidallah, Abdelkader, **85c:35096**

- Korol'ev, A. G. Boundedness of generalized solutions of elliptic differential equations. (Russian) **85k:35080**
- Lanconelli, Ermanno. See Franchi, Bruno, **85b:35018**
- Meier, Michael. Liouville theorems, partial regularity and Hölder continuity of weak solutions to quasilinear elliptic systems. **85k:35072**
- Muradov, Kh. R. The first boundary value problem for the Schrödinger equation. (Russian. English and Azerbaijani summaries) **85c:35030**
- Vásquez, Juan L. (with Véron, L.) Singularities of elliptic equations with an exponential nonlinearity. **85i:35063**
- Véron, L. See Vásquez, Juan L., **85i:35063**
- Yamasaki, Masao. Régularité microlocale quasi homogène des solutions d'équations aux dérivées partielles non linéaires. (English summary) [Quasihomogeneous microlocal regularity of solutions of nonlinear partial differential equations] **85h:35043**

### 35D99 None of the above, but in this section

- Dias Dias, Jesús Ildefonso (with Véron, L.) Compacité du support des solutions d'équations quasi linéaires elliptiques ou paraboliques. (English summary) [Compactness of support of solutions of parabolic or elliptic quasilinear equations] **85g:35026**
- Liang, Xi Ting (with Wu, Zai De; Lu, You Wen). Estimates for the maximum of the generalized solutions of a class of parabolic equations. (Chinese. English summary) **85k:35037**
- Lu, You Wen. See Liang, Xi Ting; et al., **85k:35037**
- Plazzi, Piero. Existence of partially "analytic" distributional solutions to degenerate Cauchy problems for Kolmogorov-type equations. (Italian summary) **85j:35039**
- Véron, L. See Dias Dias, Jesús Ildefonso, **85g:35026**
- Wu, Zai De. See Liang, Xi Ting; et al., **85k:35037**
- Ziemer, William P. Mean values of subsolutions of elliptic and parabolic equations. **85j:35040**

secondary classifications (35D99)

- Herrero, Miguel A. On the growth of the interfaces of a nonlinear degenerate parabolic equation. **85g:35072**
- Ikeda, Yoshiaki. Weak solutions of a quasilinear degenerate elliptic system with discontinuous coefficients. **85h:35099**
- Mäkelä, J. Characterization of the gradient of a distribution. **85b:46046**
- Ziemer, William P. Regularity at the boundary and removable singularities for solutions of quasilinear parabolic equations. (See **85g:35003**)

### 35Exx Equations and systems with constant coefficients

[See also 35N05.]

secondary classifications (35Exx)

- Hörmander, Lars. ★ The analysis of linear partial differential operators. II. **85g:35002b**
- 35E05 Fundamental solutions
- Langenbruch, Michael. Fundamental solutions with partially bounded support. **85k:35038**
- Wagner, Peter. Parameterintegration zur Berechnung von Fundamentallösungen. [Parameter integration for the computation of fundamental solutions] **85j:35041**
- 35E10 Convexity properties
- Bratti, Giuliano. Semiglobal Cauchy problem in two variables. (Italian) **85k:35039a**
- Oliveri, U. A theorem on homogeneous differential polynomials in  $\mathbb{R}^2$ . (Italian) **85k:35039b**

secondary classifications (35E10)

- Gindikin, S. G. See Volevich, L. R., **85b:58123**
- Volevich, L. R. (with Gindikin, S. G.) Partition of unity, related to a Newton polyhedron. (Russian) **85b:58123**

### 35E15 Initial value problems

- Mandshavidze, G. F. (with Tutschke, Wolfgang). Some estimates of the norms of derivatives of holomorphic functions, and their application to initial value problems. (Russian. English and German summaries) **85k:35040**
- Tutschke, Wolfgang. See Mandshavidze, G. F., **85k:35040**

secondary classifications (35E15)

- Dubinskii, Yu. A. Pseudodifferential operators with complex variables and their applications. (Russian) **85b:35070**
- Lowndes, J. S. Cauchy problems for second-order hyperbolic differential equations with constant coefficients. **85f:35132**
- Surla, Katarina. On the convergence of some finite difference schemes for a singular perturbation problem. (Serbo-Croatian summary) **85d:65044**

### 35E20 General theory

- Ben-Artzi, Matania (with Devinatz, Allen). On the uniqueness of  $L^2$ -solutions in half-space of certain differential equations. **85c:35011**
- Cattabriga, Lamberto. On the surjectivity of differential polynomials on Gevrey spaces. **85f:35046**
- Chau, N. N. Triviality classes of solution of a system of partial differential equations in a half space. (Russian) **85i:35031**
- Devinatz, Allen. See Ben-Artzi, Matania, **85c:35011**
- Fedak, I. V. The generalized Dirichlet problem for differential equations with constant coefficients in some classes of generalized functions. (Russian) **85f:35047**
- Hansen, Sönke. On the "fundamental principle" of L. Ehrenpreis. **85h:35054**



**Lies, Otto** Propagation of singularities for global solutions of constant coefficient partial differential equations in the presence of growth-type restrictions at infinity. **85h:35055**

**Luan, Wen Gai** The stability estimates of improperly posed Cauchy problems for linear partial differential equations with constant coefficients. (Chinese. English summary) **85a:35022**

**Roshtnyak, Yu. G.** Linear differential operators of finite type. (Russian) **85k:35041**

**Zampieri, Giuseppe** Stability under localization of the Phragmén-Lindelöf principle. (Italian summary) **85c:35012**

secondary classifications (35E20)

**Akhmedov, Sh. A.** An analogue of Malgrange's theorem. (Russian. Tajiki summary) **85k:46043**

**Andreev, Andrei Sergeevich** Asymptotic behavior of the spectrum of the Dirichlet problem for differential operators with constant coefficients. (Russian) **85g:35092**

**Bronshtein, M. D.** An analogue of the Phragmén-Lindelöf theorem. (Russian) **85g:35018**

**Irimie, V.** Le principe d'absorption limite pour une classe d'opérateurs formellement hypoelliptiques. (English summary) [The limiting absorption principle for formally hypoelliptic operators] **85a:35013**

**I'kiv, V. S.** A nonlocal boundary value problem for infinite-order partial differential equations. (Russian) **85j:46050**

**Ishimura, Ryūichi** Sur les équations différentielles dans l'espace des polynômes et dans l'espace des séries formelles. [On differential equations in the space of polynomials and in the space of formal series] **85a:35007**

**Madgerova, Andreana S.** On spaces of complex-valued functions with strong generalized derivatives of Laurent Schwartz-Sobolev type. **85d:46043**

**Rogulei, M.** Integral operator associated with a partial differential equation of any order, with constant coefficients and any number of variables. (Romanian. French summary) **85b:35007**

**Shibata, Yoshihiro** Lower bounds of solutions of general boundary value problems for differential operators with constant coefficients in a half-space. **85f:35012**

**Vaillant, J.** ★ Equations hyperboliques à coefficients constants. (French) [Hyperbolic equations with constant coefficients] **85j:35114**

**35E99** None of the above, but in this section

secondary classifications (35E99)

**Iarrobino, Anthony** Compressed algebras: Artin algebras having given socle degrees and maximal length. **85j:13030**

**Laird, P. G.** (with Mills, Jane) On systems of linear functional equations. **85c:39010**

**Milla, Jane** See Laird, P. G., **85c:39010**

**Bitsadze, A. V.** On the Cauchy problem for a class of first-order nonlinear partial differential equations. (Russian) (Not in MR)

## 35Fxx General first-order equations and systems

secondary classifications (35Fxx)

**Pazy, A.** ★ Semigroups of linear operators and applications to partial differential equations. **85g:47061**

**35F05** Linear equations and systems, general

**Leaci, Antonio** On the solutions of first-order partial differential equations in sets with finite perimeters. (Italian. English summary) **85g:35027**

secondary classifications (35F05)

**Baouendi, M. Salah** (with Trèves, François) Approximation of solutions of linear PDE with analytic coefficients. **85b:35003**

**Čanák, Miloš** Systeme von Differentialgleichungen erster Ordnung vom elliptischen Typus mit analytischen Koeffizienten und Methode der verallgemeinerten areolären Reihen. [Systems of first-order differential equations of elliptic type with analytic coefficients and method of generalized areolar series] **85b:35005**

**Jacobowitz, Howard** (with Trèves, François) Nowhere solvable homogeneous partial differential equations. **85b:32031**

(with Trèves, François) Aberrant CR structures. **85c:32033**

(Komech, A. I.) See Baouendi, M. Salah, **85b:35003**

**Lefèvre, Claude** On a simple epidemic model with a heterogeneous infective population. **85a:92027**

(Shubin, M. A.) See Baouendi, M. Salah, **85b:35003**

**Trèves, François** See Jacobowitz, Howard, **85b:32031**; Baouendi, M. Salah, **85b:35003** and Jacobowitz, Howard, **85c:32033**

**35F10** Initial value problems for linear equations and systems

**Carriero, Michele** (with Leaci, Antonio; Pascali, Eduardo) Convergence for the first integral equation associated with the bounce problem. (Italian. English summary) **85h:35056**

**Laptinskii, V. N.** See Zheestkov, S. V., **85d:35020**

**Leaci, Antonio** See Carriero, Michele; et al., **85h:35056**

**Pascali, Eduardo** See Carriero, Michele; et al., **85h:35056**

**Zheestkov, S. V.** (with Laptinskii, V. N.) Some estimates for the solution of the Cauchy problem for systems of linear partial differential equations. (Russian. English summary) **85d:35020**

**35F15** Boundary value problems for linear equations and systems

**Li, De Ning** Symmetric positive systems near variant characteristic boundary. (Chinese) **85g:35028**

The admissible boundary value problems for symmetric positive systems in corner domains. (Chinese) **85k:35042**

**Murtashev, D.** On the system of Moisil-Teodorescu equations. (Russian. Tajiki summary) **85j:35042**

secondary classifications (35F15)

**Carriero, Michele** (with Leaci, Antonio; Pascali, Eduardo) Convergence for the first-integral equation associated with the one-dimensional elastic bounce problem. (Italian. English summary) **85h:70002**

**Chechev, I. I.** See Klabukova, L. S., **85i:30090**

**Cherief, Kh. Ch.** Multivalued generalized analytic functions in multiply connected domains. (Russian) **85d:30076**

**Kapshvyl, A. A.** (with Yakovenko, V. M.) A problem of  $z^2$ -analytic functions for a half-plane with two cuts. (Russian) **85g:30082**

**Klabukova, L. S.** (with Chechev, I. I.) Solution of boundary value problems of the theory of generalized analytic functions by the variational-difference method. (Russian) **85i:30090**

**Leaci, Antonio** See Carriero, Michele; et al., **85h:70002**

**Pascali, Eduardo** See Carriero, Michele; et al., **85h:70002**

**Pokashev, V. V.** A boundary value problem of linear conjugation for singly-periodic polyanalytic functions. (Russian) **85j:30101**

**Selvaggi, Renata** (with Sisto, Irene) Boundary value problems for first-order symmetric elliptic systems with constant coefficients in open sets of class  $C^1$ . (Italian. English summary) **85h:35079**

**Sisto, Irene** See Selvaggi, Renata, **85h:35079**

**Yakovenko, V. M.** See Kapshvyl, A. A., **85g:30082**

**35F20** Nonlinear equations and systems, general

**Alinhac, S.** (with Métivier, G.) Propagation of analyticity for solutions of nonlinear partial differential equations. **85c:35025**

**Bardi, Martino** (with Evans, Lawrence C.) On Hopf's formulas for solutions of Hamilton-Jacobi equations. **85k:35043**

**Crandall, Michael G.** (with Lions, Pierre-Louis) Viscosity solutions of Hamilton-Jacobi equations. **85g:35029**

(with Lions, Pierre-Louis) Solutions de viscosité non bornées des équations de Hamilton-Jacobi du premier ordre. (English summary) [Unbounded viscosity solutions of first-order Hamilton-Jacobi equations] **85k:35044**

**Evans, Lawrence C.** Some min-max methods for the Hamilton-Jacobi equation. **85b:35009**

See also Bardi, Martino, **85k:35043**

**Ishii, Hitoaki** Remarks on existence of viscosity solutions of Hamilton-Jacobi equations. **85k:35045**

Uniqueness of unbounded viscosity solution of Hamilton-Jacobi equations. **85h:35057**

**Lions, Pierre-Louis** Existence results for first-order Hamilton-Jacobi equations. (French summary) **85j:35043**

See also Crandall, Michael G., **85g:35029** and **85k:35044**

**Luo, Pei Zhu** A class of special systems of nonlinear equations. II. (Chinese) (Not in MR)

**Mal'kov, K. V.** On the question of the homeomorphism of systems of total differential equations. (Russian) **85f:35048**

**Métivier, G.** See Alinhac, S., **85c:35025**

**Vázquez, Juan L.** Existence and regularity of solutions for a semilinear first-order equation on the torus. **85i:35032**

secondary classifications (35F20)

**Cinquini-Cibrario, Maria** Some recent research concerning systems of partial differential equations. (Italian) **85g:35034**

**Crandall, Michael G.** Viscosity solutions of Hamilton-Jacobi equations. **85b:35034**

**Ito, Hideo** Long periodic orbits near an equilibrium and the averaging method in higher-order resonances. **85h:58058**

**Kalinowski, M. W.** Gauge transformation of simple waves. **85h:58176**

**Lar'kin, N. A.** (with Novikov, V. A.; Yanenko, N. N.) ★ Нелинейные уравнения переменного типа. (Russian) [Nonlinear equations of variable type] **85h:35152**

**Lenhart, Susanne M.** Semilinear approximation technique for max-min type Hamilton-Jacobi equations over finite max-min index set. **85c:49047**

**Nasyrov, Z. Kh.** (with Tupchiev, V. A.) A problem on the decay of a discontinuity for a class of systems of three equations. (Russian) **85k:35018**

**Novikov, V. A.** See Lar'kin, N. A.; et al., **85h:35152**

**Popov, Georgi St.** Spectral asymptotics for elliptic operators. **85h:58173**

**Rosen, G.** Reciprocal transformation for one-dimensional conservation equations. **85c:35003**

**Sagalyuk, I. S.** A method of optimization of systems with distributed parameters. (Russian) **85f:49015**

**Tupchiev, V. A.** See Nasyrov, Z. Kh., **85k:35018**

**Yanenko, N. N.** See Lar'kin, N. A.; et al., **85h:35152**

**35F25** Initial value problems for nonlinear equations and systems

**Caginalp, Gunduz** Nonlinear equations and systems in several space variables. **85g:35030**

**Lakshmikantham, V.** (with Ogustörel, M. N.; Vatsala, A. S.) Monotone iterative technique for partial differential equations of first order. **85j:35044**

**Ogustörel, M. N.** See Lakshmikantham, V.; et al., **85j:35044**

Pimbley, George H. On solving quasilinear systems using semigroups and the Trotter product formula. (See 85k:00006)

Qin, Tie Hu The existence of global smooth solutions for Cauchy problems of first-order quasilinear partial differential equations. (Chinese. English summary) 85j:35045

Vatsala, A. S. See Lakshmikantham, V.; et al., 85j:35044

### 35F30 Boundary value problems for nonlinear equations and systems

Akhalaya, G. Ya. A boundary value problem of the Dirichlet problem type for a nonlinear system of first-order differential equations on the plane. (Russian. English and Georgian summaries) 85f:35049

Belov, Yu. A. Global solution of a first-order partial differential equation. II. (Russian) 85i:35033

Besala, P. On the uniqueness of initial value problems for partial differential equations of the first order. 85g:35031

Giarrusso, E. (with Nunziante, D.) Symmetrization in a class of first-order Hamilton-Jacobi equations. 85c:35026

Lia, Zheng Guo Nonhomogeneous boundary value problems for quasilinear positive symmetric systems. (Chinese. English summary) 85k:35046

Mandashavidze, G. F. (with Tutschke, Wolfgang) Some boundary value problems for first-order nonlinear differential systems on the plane. (Russian. English and Georgian summaries) 85f:35050

Nunziante, D. See Giarrusso, E., 85c:35026

Tutschke, Wolfgang See Mandashavidze, G. F., 85f:35050

Zhao, Jun Ning The first boundary value problem for first-order quasilinear equations. (Chinese. English summary) 85d:35021

#### secondary classifications (35F30)

Bassanini, Piero The problem of Graffi-Cesari. 85f:78023

Iwaniec, T. (with Mamourian, A.) On the first-order nonlinear differential systems with degeneration of ellipticity. 85h:35077

Mamourian, A. See Iwaniec, T., 85h:35077

### 35F99 None of the above, but in this section

Xiong, Xi Jin Generalized solutions in the sense of L. Bers for a class of systems of mixed linear partial differential equations. (Chinese) (Not in MR)

#### secondary classifications (35F99)

Bachet, F. Transformation d'un système complètement intégrable formé d'équations du type de Riccati. [Transformation of a completely integrable system of equations of Riccati type] 85a:58040

Tutschke, Wolfgang Cauchy problems with monogenic initial values. 85b:30063

### 35Gxx General higher-order equations and systems

#### secondary classifications (35Gxx)

Pary, A. ★ Semigroups of linear operators and applications to partial differential equations. 85g:47061

### 35G05 Linear equations and systems, general

Campanini, Rita Characterization of linear differential operators that are invariant with respect to planar congruence groups. (Italian. English summary) 85f:35051

Fredricks, Gregory A. The geometry of second order linear partial differential operators. 85a:35023

Hamada, Yūsaku (with Taikeuchi, Akira) Le domaine d'existence de la solution des problèmes de Goursat pour des systèmes d'équations différentielles. [Existence domain of solutions of Goursat problems for systems of differential equations] (See 85d:35003)

Hong, Jia Xing Local estimates for differential operators of higher order with characteristic degenerate surfaces. (Chinese. English summary) 85k:35047

Kuleshov, A. A. Linear equations in spaces of generalized periodic functions. (Russian) 85j:35046

Taikeuchi, Akira See Hamada, Yūsaku, (85d:35003)

Xu, Zheng Fan Uniformity of strong and weak solutions and their differentiability for linear PDE of higher order. 85g:35032

#### secondary classifications (35G05)

Abramowicz, J. Some applications of generalized exponentials to partial differential equations. 85f:35036

Adjagbo, Kossivi Théorème d'indice dans les espaces vectoriels. Applications aux systèmes généraux d'équations différentielles linéaires. (English summary) [Index theorem in vector spaces. Applications to general systems of linear differential equations] 85a:58093

Nacovich, Mauro On weighted estimates for some systems of partial differential operators. 85i:35105

Ospanov, K. N. Properties of solutions of equations of the type of the stationary Schrödinger equation. (Russian) 85c:35031

Persson, Jan  $P$ -convexity and global holomorphic solvability. 85h:35005

Shibata, Yoshihiro Lower bounds of solutions of general boundary value problems for differential operators with constant coefficients in a half-space. 85f:35012

Ueno, Tadashi Representation of the generator and the boundary condition for semigroups of operators of kernel type. 85i:47042

Wang, Ji Yan (with Zhang, Lu Ping) The  $H_1$  solutions of a class of Fuchs type partial differential equations with differential operator coefficients. (Chinese) 85m:35010

Yano, Tamaki  $b$ -functions and exponents of hypersurface isolated singularities. 85b:32012

Zhang, Lu Ping See Wang, Ji Yan, 85m:35010

### 35G10 Initial value problems for linear equations and systems

#### secondary classifications (35G10)

Bauer, K. W. Riemannfunktionen und Differentialoperatoren. (English and Russian summaries) [Riemann functions and differential operators] 85f:35033

Chernyavskii, A. G. Quasianalytic classes of functions connected with general linear partial differential operators. (Russian) 85d:36010

Nishtani, Tatsuo A note on the local solvability of the Cauchy problem. 85g:35012

Urabe, Jichiro Hamada's theorem for a certain type of the operators with double characteristics. 85j:35012

### 35G15 Boundary value problems for linear equations and systems

Aliev, N. A. A plane problem with entangled boundary conditions. (Russian) (See 85g:35004)

Bubnov, B. A. A mixed problem for a class of nonclassical equations. (Russian) 85m:35012

Demidenko, G. V. Mixed problems for a class of equations of Sobolev type. (Russian) 85k:35048

Ismatov, M. Solvability of some nonclassical mixed problems. (Russian. Tajiki summary) 85c:35013

On the well-posedness of some mixed problems for a differential equation of order  $2m$ . (Russian. Tajiki summary) 85c:35014

Khe Kan Cher Nonuniqueness of solutions of some boundary value problems for degenerate equations. (Russian) 85j:35047a

Erratum: "Nonuniqueness of solutions of certain boundary value problems for degenerate equations". (Russian) 85j:35047b

Mamyan, A. Kh. Some properties of a set of boundary value problems. (Russian) 85g:35033

Sharifov, M. R. Investigation of a mixed problem for a fourth-order equation that is not covered by existing standard classifications. (Russian) (See 85g:35004)

Tervo, Jouko Zur Theorie der koersitiven linearen partiellen Differentialoperatoren. [On the theory of coercive linear partial differential operators] 85f:35052

Tovmazyan, N. E. General boundary value problem for a system of differential equations in a half plane with violation of Ya. B. Lopatinskiĭ's condition. (Russian) 85i:35034

Varshina, I. G. A uniqueness theorem for the solution of an initial-boundary value problem in a bounded domain for a system of differential equations of thermodiffusion in the quasistatic case. (Russian) (Not in MR)

Yakubov, S. A mixed problem for correct equations in Petrovskii's sense. (Russian) 85m:35013

#### secondary classifications (35G15)

Kondrat'ev, V. A. (with Oleinik, O. A.) Boundary value problems for partial differential equations in nonsmooth domains. (Russian) 85j:35002

Kufner, Alois (with Opic, Bohumír) The Dirichlet problem and weighted spaces. I. (Russian summary) 85j:35057

Michalski, Marek W. The uniqueness of the solutions of the Dirichlet and the third boundary value problems. 85b:32047

Oleinik, O. A. See Kondrat'ev, V. A., 85j:35002

Opic, Bohumír See Kufner, Alois, 85j:35057

### 35G20 Nonlinear equations and systems, general

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Fu, Hong Yuan See Zhou, Yu Lin, 85d:35022

Lavrenyuk, S. P. Existence of bounded solutions of a mixed problem for differential equations containing a second derivative with respect to time. (Russian) (See 85k:35001)

Lin, Sung Shan Some results for semilinear differential equations at resonance. 85g:35035

Petselová, Hana Application of Moser's method to a certain type of evolution equations. 85i:35035

Solimni, Sergio Differential problems with symmetries: equations with jumping nonlinearities. 85k:35049

Zhou, Yu Lin (with Fu, Hong Yuan) A class of generalized nonlinear Schrödinger systems of higher order. (Chinese. English summary) 85d:35022

#### secondary classifications (35G20)

Aronsson, Gunnar On certain singular solutions of the partial differential equation  $u_{xx}^2 + 2u_x u_y u_{xy} + u_y^2 u_{yy} = 0$ . 85m:35011

Buttasso, Giuseppe (with Leaci, Antonio) A continuity theorem for operators from  $W^{1,q}(\Omega)$  into  $L^r(\Omega)$ . 85k:49036

Gvasava, D. K. The Cauchy problem for an equation of surface theory. (Russian. English and Lithuanian summaries) 85c:53002

Horgan, C. O. (with Payne, L. E.) Decay estimates for second-order quasilinear partial differential equations. 85i:35017

Lar'kin, N. A. (with Novikov, V. A.; Yanenko, N. N.) ★ Нелинейные уравнения переменного типа. (Russian) [Nonlinear equations of variable type] 85h:35152

Leaci, Antonio See Buttasso, Giuseppe, 85k:49036

Leonov, K. Ya. Boundedness of the rate of propagation of perturbations. (Russian. English and Azerbaijani summaries) 85i:35010

(Lin, Chang Shou) See Nirenberg, L., 85h:58035

Nirenberg, L. Comments on nonlinear problems. 85h:58035

Novikov, V. A. See Lar'kin, N. A.; et al., 85h:35152

Payne, L. E. See Horgan, C. O., 85i:35017

Yanenko, N. N. See Lar'kin, N. A.; et al., 85h:35152

## 35G30 Boundary value problems for nonlinear equations and systems

- Gasanov, M. G. Initial-boundary value problem for a nonlinear parabolic-hyperbolic system of equations. (Russian. English and Azerbaijani summaries) **85f:35053**  
 Koshanov, A. I. A mixed problem for strongly nonlinear third-order multidimensional equations. (Russian) (See **85k:35001**)  
 Salikhov, Sh. N. A boundary value problem for a partial differential equation with real characteristics. (Russian) **85m:35014**

secondary classifications (35G30)

- McKenna, P. J. (with Walter, Wolfgang) On the multiplicity of the solution set of some nonlinear boundary value problems. **85j:35074**  
 Nagle, R. Kent Equations with nonlinearities defined only on subsets. **85h:35092**  
 Prusko, Tadeusz Some applications of the topological degree theory to multivalued boundary value problems. **85j:34030**  
 Walter, Wolfgang See McKenna, P. J., **85j:35074**

## 35G99 None of the above, but in this section

- Wen, Jing A note on complex powers of the Laplace operator, wave operator and heat operator. (Chinese. English summary) **85k:35060**

secondary classifications (35G99)

- Ōuchi, Sunao Index, localization and classification of characteristic surfaces for linear partial differential operators. **85j:35014**  
 Palamodov, V. P. Some singular boundary value problems for partial differential equations. (Russian) **85m:58176**  
 Rõm, R. Hilbert spaces of solenoidal functions in a two-dimensional rectangular domain. (Russian. English and Estonian summaries) **85e:46020**  
 Singh, Sarva Jit A note on the expansion of cylindrical eigenvectors in terms of spherical eigenvectors. **85d:73008**  
 Trépau, Jean-Marie Systèmes différentiels à caractéristiques simples et structures réelles-complexes (d'après M. S. Baouendi et F. Trèves; M. Sato, T. Kawai et M. Kashiwara). [Differential systems with simple characteristics and real-complex structures (after M. S. Baouendi and F. Trèves; M. Sato, T. Kawai and M. Kashiwara)] **85i:58109**  
 Viainin, Augusto Strong convergence results related to strict convexity. **85f:49028**

## 35H05 Hypoelliptic equations and systems [See also 58Gxx.]

- Amano, Kazuo Stochastic representation and singularities of solutions of second order equations with semidefinite characteristic form. **85k:35051**  
 Bolley, P. (with Camus, J.; Métivier, G.) Régularité Gevrey et itérés pour une classe d'opérateurs hypoelliptiques. [Gevrey regularity and iterates for a class of hypoelliptic operators] **85h:35058**  
 Camus, J. See Bolley, P.; et al., **85h:35058**  
 Grigis, Alain (with Rothschild, Linda Preiss) A criterion for analytic hypoellipticity of a class of differential operators with polynomial coefficients. **85f:35054**  
 Helffer, B. (with Nourrigat, J.) Hypoellipticité maximale pour des opérateurs polynômes de champs de vecteurs. [Maximal hypoellipticity for polynomial operators of vector fields] **85f:35055**  
 Itimie, V. Opérateurs hypoelliptiques dans des espaces de Gevrey. [Hypoelliptic operators in Gevrey spaces] **85k:35052**  
 Karachun, V. Ya. See Ovsienko, V. G., **85h:35059**  
 Kha T'en Ngoan A necessary condition for hypoellipticity for second-order equations with a sign-variable characteristic form. (Russian) **85e:35027**  
 Kwon, Kil Hyun Concatenations applied to analytic hypoellipticity of operators with double characteristics. **85j:35048**  
 Métivier, G. See Bolley, P.; et al., **85h:35058**  
 Nourrigat, J. See Helffer, B., **85f:35055**  
 Ovsienko, V. G. (with Karachun, V. Ya.) A mixed initial-boundary value problem of heat conduction in a cylindrical layer. (Russian) **85h:35059**  
 Pehkonen, Erkki Supplement to the article: "A hypoelliptic Dirichlet problem" [Soc. Sci. Fenn. Comment. Phys.-Math. **48** (1978), no. 3, 131-143; MR **80j:35021**]. (German. English summary) **85h:35060**  
 Popivanov, Pet'ar R. On the hypoellipticity of a pseudodifferential system with a diagonal principal symbol. **85d:35023**  
 A link between small divisors and smoothness of the solutions of a class of partial differential operators. **85k:35053**  
 Rodino, Luigi On the Gevrey wave front set of the solutions of a quasielliptic degenerate equation. **85k:35054**  
 Rothschild, Linda Preiss See Grigis, Alain, **85f:35054**  
 Shaw, Mei Chi Hypoellipticity of a system of complex vector fields. **85e:35028**  
 Tartakoff, David S. Operators with multiple characteristics—an  $L^2$  proof of analytic hypoellipticity. **85f:35056**  
 Veretennikov, A. Ju. Probabilistic approach to hypoellipticity. (Russian) **85e:35029**  
 Zanghirati, L. Iterates of a class of degenerate quasielliptic operators. **85k:35055**

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- Barker, S. R. (with Salamon, S. M.) Analysis on a generalized Heisenberg group. **85d:22022**  
 Batteisti, Françoise Solution élémentaire d'un opérateur bi-invariant sur certains groupes nilpotents. (English summary) [Fundamental solution of a bi-invariant operator on certain nilpotent groups] **85d:22014**  
 Beals, Michael (with Fefferman, Charles; Grossman, Robert) Strictly pseudoconvex domains in  $\mathbb{C}^n$ . **85a:32025**  
 Beals, Richard William (with Greiner, Peter C.) Pseudodifferential operators associated to hyperplane bundles. **85h:58163**  
 Chen, Shu Xing Some applications of Borel technique in partial differential equations. **85f:35004**

- Corwin, L. Necessary and sufficient conditions for hypoellipticity of certain left invariant operators on nilpotent Lie groups. **85h:58156**

- Crouch, P. E. Solvable approximations to control systems. **85e:58135**

- Fefferman, Charles The uncertainty principle. **85f:35001**

See also Beals, Michael; et al., **85a:32025**

- Friedlander, F. G. A unique continuation theorem for the wave equation in the exterior of a characteristic cone. **85h:35131**

- Geller, D. Liouville's theorem for homogeneous groups. **85f:58109**

- Głowacki, Paweł On commutative approximate identities on nongraded homogeneous groups. **85m:22011**

- Gramchev, Tudor See Popivanov, Pet'ar R., **85h:35238**

- Greiner, Peter C. See Beals, Richard William, **85h:58163**

- Grossman, Robert See Beals, Michael; et al., **85a:32025**

- Helffer, B. (with Robert, Didier) Comportement semi-classique du spectre des hamiltoniens quantiques hypoelliptiques. [Semiclassical behavior of the spectrum of hypoelliptic quantum Hamiltonians] **85a:35065**

- (with Nourrigat, J.) Théorèmes d'indice pour des opérateurs différentiels à coefficients polynomiaux. [Index theorems for differential operators with polynomial coefficients] **85h:22018**

- Itimie, V. Opérateurs pseudo-différentiels itérés et analyticité. [Iterated pseudodifferential operators and analyticity] **85g:35127**

- Le principe d'absorption limite pour une classe d'opérateurs formellement hypoelliptiques. (English summary) [The limiting absorption principle for formally hypoelliptic operators] **85a:35013**

- Iordanov, I. V. See Popivanov, Pet'ar R., **85k:35241**

- Karapetyan, G. A. Solution of semielliptic equations in a half space. (Russian. Armenian summary) **85j:35082**

- Theorems of Liouville and Phragmén-Lindelöf type for general regular equations. (Russian. English and Armenian summaries) **85f:35029**

- Karapetraklieva, M. G. Local solvability and hypo-ellipticity of a class of differential operators with double characteristics. (Russian) **85h:35006**

- Korányi, Adam Geometric aspects of analysis on the Heisenberg group. **85h:32055**

- Langenbruch, Michael Fundamental solutions with partially bounded support. **85k:35038**

- Laubin, Pascal Analyse microlocale des singularités analytiques. [Microlocal analysis of analytic singularities] **85g:58087**

- Lewis, Jeff E. (with Parenti, Cesare) Parametries for a class of totally characteristic operators. **85k:35003**

- Lorenz, Michael Differential operators with a totally characteristic point. **85i:35003**

- Métivier, G. Équations aux dérivées partielles sur les groupes de Lie nilpotents. [Partial differential equations on nilpotent Lie groups] **85f:58128**

- Miller, Kenneth G. Microhypoellipticity on step two nilpotent Lie groups. **85e:58156**

- Mohamed, A. Étude spectrale d'opérateurs hypoelliptiques à caractéristiques multiples. I. (English summary) [Spectral study of hypoelliptic operators with multiple characteristics. I] **85e:35093a**

- Étude spectrale d'opérateurs hypoelliptiques à caractéristiques multiples. II. [Spectral study of hypoelliptic operators with multiple characteristics. II] **85e:35093b**

- Nourrigat, J. See Helffer, B., **85h:22018**

- Ōaku, Toshinori Analytic hypoellipticity and propagation of regularity for a system of microdifferential equations with noninvolutive characteristics. **85k:58078**

- Parenti, Cesare See Lewis, Jeff E., **85k:35003**

- Petsche, Hans-Joachim On the vanishing of cohomology groups with values in a product sheaf. **85f:32013**

- Phong, D. H. (with Stein, E. M.) Singular integrals with kernels of mixed homogeneities. **85h:42009**

- Popivanov, Pet'ar R. (with Iordanov, I. V.) ★ Paradiifferential operators and propagation of singularities for nonlinear P.D.E. **85k:35241**

- (with Gramchev, Tudor) An application of subelliptic operators to the mixed problem for a second order hyperbolic equation. **85h:35238**

- Robert, Didier See Helffer, B., **85a:35065**

- Rothschild, Linda Preiss A remark on hypoellipticity of homogeneous invariant differential operators on nilpotent Lie groups. **85f:58110**

- Saito, Tetsuo The globally analytic hypoellipticity of the  $\bar{\partial}$ -Neumann problem for some weakly pseudoconvex domains in  $\mathbb{C}^n$ . **85g:35087**

- Salamon, S. M. See Barker, S. R., **85d:22022**

- Shanin, N. A. Local nonsolvability and nonhypoellipticity of (pseudo-) differential equations with weighted symbols. (Russian) **85b:35001**

- Shibata, Yoshihiro Lower bounds of solutions of general boundary value problems for differential operators with constant coefficients in a half-space. **85f:35012**

- Sjöstrand, J. Analytic wavefront sets and operators with multiple characteristics. **85e:35022**

- Analytic regularity for operators with multiple characteristics. **85k:35008**

- Stein, E. M. See Phong, D. H., **85h:42009**

- Zanghirati, L. Iterates of operators and anisotropic microlocal Gevrey regularity. (Italian) **85h:35013**

## 35Jxx Elliptic equations and systems [See also 58G05, 58G10.]

secondary classifications (35Jxx)

- Danilyuk, I. I. See Vol'pert, A. I.; et al., **85m:01051**

- Markovskii, A. I. See Vol'pert, A. I.; et al., **85m:01051**

- Skripnik, I. V. See Vol'pert, A. I.; et al., **85m:01051**

- Vol'pert, A. I. (with Danilyuk, I. I.; Markovskii, A. I.; Skripnik, I. V.) Ya. B. Lopatinskiĭ's work in the general theory of elliptic boundary value problems. (Russian) **85m:01051**



### 35J05 Laplace equation, reduced wave equation (Helmholtz), Poisson equation

- Abbasov, Z. G. The principle of limit amplitude for the Helmholtz equation in a cylindrical domain. (Russian. English and Azerbaijani summaries) **85h:35061**
- Angell, T. S. (with Kleinman, R. E.) Modified Green's functions and the third boundary value problem for the Helmholtz equation. **85c:35015**
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**Lagnese, John** Decay of solutions of wave equations in a bounded region with boundary dissipation. **85f:35025**

**Mankin, R.** Fundamental solution of the wave equation in case of a curved space-time. (Russian and Estonian summaries) **85b:58124**

**Moiseev, E. I.** (with **Tikhomirov, V. V.**; **Kozlov, E. A.**) A mean value formula for the regular solution of a hyperbolic equation. (Russian) **85a:35020**

**Orochko, Yu. B.** Local finite rate of propagation of a hyperbolic equation in the problem of selfadjointness of powers of a second-order elliptic differential operator. (Russian) **85a:35025**

**Qiu, Pei Zhang** See **Wang, Yun Bo**; et al., **85e:35017**

**Ratanov, E. N.** Stabilization of statistical solutions of second-order hyperbolic equations. (Russian) **85i:35150**

**Tikhomirov, V. V.** See **Moiseev, E. I.**; et al., **85a:35020**

**Wang, Yun Bo** (with **Qiu, Pei Zhang**; **Chen, Qi Hong**) A remark on the limit relation between the fundamental solutions of hyperbolic and parabolic equations. (Chinese. English summary) **85e:35017**

**Zil'bergel', A. S.** (with **Kopilevich, Yu. I.**) ★ Спектральная теория регулярных волноводов. (Russian) [The spectral theory of regular waveguides] **85i:78025**

### 35L15 Second-order equations, initial value problems

**Aleksandryan, G. R.** (with **Yagdzhyan, K. A.**) Conditions for well-posedness of the Cauchy problem and propagation of singularities of solutions of equations with multiple characteristics. (Russian. English and Armenian summaries) **85e:35055**

**Borgardt, A. A.** (with **Karpenko, D. Ya.**) Characteristic problem for the massive wave equation. (Russian) **85f:35130**

**Colombini, Ferruccio** (with **Jannelli, E.**; **Spagnolo, S.**) Well-posedness in the Gevrey classes of the Cauchy problem for a nonstrictly hyperbolic equation with coefficients depending on time. **85f:35131**

**Ebihara, Yukiyo** On solutions of second order nonlinear evolution equations in a real Hilbert space. **85g:35074**

Some evolution equations with linear and quasilinear strong dissipation. **85h:35136**

**Grigoliya, M. P.** The well-posedness of the Goursat problem. (Russian. English and Georgian summaries) **85i:35090**

**Iwasaki, Nobuhisa** The Cauchy problem for effectively hyperbolic equations (a special case). **85d:35067**

**Jannelli, E.** See **Colombini, Ferruccio**; et al., **85f:35131**

**Karpenko, D. Ya.** See **Borgardt, A. A.**, **85f:35130**

**Lowndes, J. S.** Cauchy problems for second-order hyperbolic differential equations with constant coefficients. **85f:35132**

**Nishitani, Tatsuo** Sur les équations hyperboliques à coefficients höldériens en  $t$  et de classe de Gevrey en  $x$ . (English summary) [On hyperbolic equations whose coefficients are Hölder continuous in  $t$  and in the Gevrey class in  $x$ ] **85g:35075**

**Pershan, A. V.**  $L_p$ -estimates of solutions of the Cauchy problem for a one-dimensional hyperbolic equation. (Russian) **85b:35029**

**Spagnolo, S.** See **Colombini, Ferruccio**; et al., **85f:35131**

**Yagdzhyan, K. A.** See **Aleksandryan, G. R.**, **85e:35055**

secondary classifications (35L15)

**Arosio, Alberto** Linear second order differential equations in Hilbert spaces. The Cauchy problem and asymptotic behaviour for large time. **85i:34033**

**Gryn', V. I.** Majorant estimation for a one-dimensional linear hyperbolic equation. (Russian) **85g:85108**

**Teimbal, V. M.** The Cauchy problem for a singularly perturbed hyperbolic equation. (Ukrainian. Russian summary) **85h:35051**

### 35L20 Second-order equations, boundary value problems

**Carbonaro, Bruno** (with **Russo, Remigio**) A uniqueness theorem for a linear hyperbolic partial differential system of the second order. **85k:35131**

**Dunninger, D. R.** The Dirichlet problem for a nonhomogeneous wave equation. (Italian summary) **85g:35076**

**Firmani, Bruno** The Dirichlet problem for a second-order equation of hyperbolic type. (Italian. English summary) **85k:35132**

**Fokin, M. V.** Solvability of the Dirichlet problem for the vibrating string equation. (Russian) **85a:35055**

**Gramchev, Todor** (with **Popivanov, Pet' R.**) Mixed problem with a singular oblique derivative for a second order strictly hyperbolic operator. **85c:35056**

(with **Popivanov, Pet' R.**) Noncorrect mixed problem for a second order strictly hyperbolic operator. **85d:35068**

See also **Popivanov, Pet' R.**, **85d:35069**

**Lasiecka, I.** (with **Triggiani, R.**) Regularity of hyperbolic equations under  $L_2(0, T; L_2(\Gamma))$ -Dirichlet boundary terms. **85j:35111**

**Malyshov, A. N.** A mixed problem for a second-order hyperbolic equation with a complex first-order boundary condition. (Russian) **85j:35112**

**Parasyuk, E. M.** See **Parasyuk, L. S.**, **85g:35077**

**Parasyuk, L. S.** (with **Parasyuk, E. M.**) The Cauchy problem for a hyperbolic differential equation with a parameter, degenerate on the boundary  $X_n = 0$ . (Ukrainian. Russian summary) **85g:35077**

**Popivanov, Pet' R.** (with **Gramchev, Todor**) Propagation des singularités analytiques et de Gevrey pour un problème mixte d'un opérateur différentiel strictement hyperbolique. (English summary) [Propagation of analytic and Gevrey singularities for a class of mixed problems for second-order strictly hyperbolic operators] **85d:35069**

See also **Gramchev, Todor**, **85c:35056** and **85d:35068**

**Russo, Remigio** See **Carbonaro, Bruno**, **85k:35131**

**Triggiani, R.** See **Lasiecka, I.**, **85j:35111**

**Zakheva, O. V.** The well-posedness of a model nonstrictly hyperbolic mixed problem. (Russian) **85h:35137**

secondary classifications (35L20)

**Amirov, A. Kh.** A class of multidimensional inverse problems. (Russian) **85i:35139**

**Dassios, George** (with **Kiriaki, Kiriakie**) The low-frequency theory of elastic wave scattering. **85f:73030**

**Gramchev, Todor** Propagation of singularities for boundary value problems. **85c:35002**

See also **Popivanov, Pet' R.**, **85h:35238**

**Kiriaki, Kiriakie** See **Dassios, George**, **85f:73030**

**Popivanov, Pet' R.** (with **Gramchev, Todor**) An application of subelliptic operators to the mixed problem for a second order hyperbolic equation. **85h:35238**

**Taimbal, V. M.** Asymptotic solution of a mixed problem for a hyperbolic equation with a parameter. (Ukrainian. Russian summary) **85g:35023**

**Wang, Chuan Fang** The discrete phenomena for the mixed problem. **85i:35099**

**Yagi, Atsushi** Differentiability of families of the fractional powers of selfadjoint operators associated with sesquilinear forms. **85b:34069**

### 35L25 Higher-order equations, general

**Samydt, Zofia** (with **Ziemian, Bogdan**) Fundamental solution for operators preserving a quadratic form. **85j:35113**

**Vaillant, J.** ★ Équations hyperboliques à coefficients constants. (French) [Hyperbolic equations with constant coefficients] **85j:35114**

**Ziemian, Bogdan** See **Samydt, Zofia**, **85j:35113**

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**Dzhavadov, M. G.** See **Volevich, L. R.**, **85j:35020**

**Tahara, Hidetoshi** Asymptotic expansions of solutions of Fuchsian hyperbolic partial differential equations. **85j:35036**

**Volevich, L. R.** (with **Dzhavadov, M. G.**) Uniform estimates for solutions of hyperbolic equations with a small parameter multiplying the highest derivatives. (Russian) **85j:35020**

**Wagner, Peter** Parameterintegration zur Berechnung von Fundamentallösungen. [Parameter integration for the computation of fundamental solutions] **85j:35041**

### 35L30 Higher-order equations, initial value problems

**Amano, Kazuo** (with **Nakamura, Gen**) Branching of singularities for degenerate hyperbolic operators. **85k:35133**

(**Gabrielov, A. M.**) See **Gårding, Lars**, **85i:35091**

**Gårding, Lars** Sharp fronts of paired oscillatory integrals. (Russian) **85i:35091**

**Mandai, Takeshi** A necessary and sufficient condition for the well-posedness of some weakly hyperbolic Cauchy problems. **85j:35115a**

Necessary conditions for well-posedness of the flat Cauchy problem and the regularity-loss of solutions. **85j:35115b**

**Melrose, Richard** The Cauchy problem for effectively hyperbolic operators. **85k:35134**

**Nakamura, Gen** See **Amano, Kazuo**, **85k:35133**

**Nishitani, Tatsuo** Energy inequality for nonstrictly hyperbolic operators in the Gevrey class. **85d:35070**

**Schuchman, Vladimir** Cauchy problem for equations with multiple characteristics. **85k:35135**

**Yoshikawa, Atsushi** Branching of singularities of solutions and the initial value problem for weakly hyperbolic equations. (Japanese) **85b:35030**

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**Bove, Antonio** (with **Lewis, Jeff E.**; **Parenti, Cesare**) Problème de Cauchy pour des opérateurs hyperboliques Fuchsien. (English summary) [Cauchy problem for Fuchsian hyperbolic operators] **85h:58167**



- Kreith, Kurt (with Swanson, Charles A.) Boundedness criteria for hyperbolic characteristic initial value problems. **85f:35011**
- Lewis, Jeff E. See Bove, Antonio; et al., **85h:58167**
- Parenti, Cesare See Bove, Antonio; et al., **85h:58167**
- Swanson, Charles A. See Kreith, Kurt, **85f:35011**
- Zakalyukin, V. M. Reconstructions of fronts and caustics depending on a parameter, and versality of mappings. (Russian) **85h:58029**

### 35L35 Higher-order equations, boundary value problems

- Figol', V. V. Stability of the Dirichlet problem for hyperbolic equations. (Russian) (See **85k:35001**)
- A problem of Dirichlet type for hyperbolic equations with constant coefficients. (Russian) **85d:35071**
- Marchanowska, H. On a class of initial-boundary value problems in a domain with boundary containing isolated points. **85d:35073**
- Ni, Xing Tang The Dirichlet problem with supports containing a noncharacteristic curve for a class of totally hyperbolic equations of third order with constant coefficients. (Chinese. English summary) **85e:35076**
- Pollack, V. N. A periodic boundary value problem for hyperbolic equations. (Russian) (See **85k:35001**)
- Ptashnik, B. I. (with Salyga, B. O.) An analogue of the multipoint problem for hyperbolic equations. (Russian) (See **85k:35001**)
- (with Salyga, B. O.) An analogue of the multipoint problem for partial differential equations with variable coefficients. (Russian) **85j:35116**
- Salyga, B. O. See Ptashnik, B. I., **85j:35116** and **(85k:35001)**

secondary classifications (35L35)

- Iskenderov, B. A. The principle of limit amplitude for hyperbolic equations. (Russian. English and Azerbaijani summaries) **85f:35024**

### 35L40 First-order systems, general

- Ávila, G. S. S. (with Rocha, W. S.) The far-field behavior of solutions of symmetric hyperbolic systems. **85h:35138**
- Barker, J. W. Interactions of fast and slow waves in hyperbolic systems with two time scales. **85h:35139**
- Bove, Antonio (with Lewin, Jeff E.; Parenti, Cesare) ★ Propagation of singularities for Fuchsian operators. **85f:35133**
- Doshchanova, M. M. A priori estimates for solutions of a symmetric hyperbolic system of equations in a domain with corners. (Russian) (See **85d:00009**)
- (Iwasaki, Chisato) See Morimoto, Yoshinori, **85i:35092**
- Lewis, Jeff E. See Bove, Antonio; et al., **85f:35133**
- Li, Zhi Shen Asymptotic solution of a system of hyperbolic partial differential equations near a cusped caustic. (Chinese. English summary) **85f:35134**
- Markovskii, A. I.  $L_p$ -estimates for hyperbolic systems. (Russian) (See **85k:35001**)
- Morimoto, Yoshinori Propagation précise des singularités pour les systèmes hyperboliques à caractéristiques de multiplicité variable. [Precise propagation of singularities for hyperbolic systems with characteristics of variable multiplicity] **85i:35092**
- Parenti, Cesare See Bove, Antonio; et al., **85f:35133**
- Rocha, W. S. See Ávila, G. S. S., **85h:35138**
- Stanomir, D. Hyperbolic systems power conservation law for harmonic time variation. **85k:35136**
- Sydykov, G. M. Estimates of solutions of a mixed problem for a system of first-order hyperbolic equations in the spaces  $L_\infty([0, T], L_p(\Omega))$  ( $1 \leq p < \infty$ ) and  $L_\infty(Q_T)$  in the case of two independent variables. (Russian) **85h:35140**
- Tamura, Hideo The principle of limiting absorption and decay of local energy for the linearized equation of magnetogasdynamics. **85b:35031**
- Taimbal, V. M. A first-order hyperbolic singularly perturbed system. (Russian) (See **85k:35001**)

secondary classifications (35L40)

- Chevalier, Jacques Discrete time finite element schemes for first order symmetric hyperbolic systems. **85g:65112**
- Marchuk, N. G. Reduction of the Cauchy problem for the wave equation to the Cauchy problem for a system of first-order equations. (Russian) **85j:35110**
- Orlovskii, D. G. Inverse Cauchy problem for linear hyperbolic systems. (Russian) **85j:35194**
- Radzikowski, J. (with Sadkowiak, W.) The properties of solutions of some hyperbolic system. **85a:35016**
- Sadkowiak, W. See Radzikowski, J., **85a:35016**

### 35L45 First-order systems, initial value problems

- Gavrilyuk, S. L. The problem of decay of an arbitrary discontinuity in media with anomalous thermodynamic properties. (Russian) **85m:35042**
- Taimbal, V. M. The Cauchy problem for a first-order hyperbolic system with several small parameters. (Russian. English summary) **85b:35032**
- Zheng, Song Mu Global smooth solutions to first-order quasilinear symmetric hyperbolic systems with dissipation. (Chinese) **85k:35137**

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- Aleksandrovich, I. N. See Pakhareva, N. A., **85e:30085**
- Branson, Thomas P. Conserved quantity partition for Dirac's equation. **85h:35182**
- Pakhareva, N. A. (with Aleksandrovich, I. N.) Integral representation of  $p$ -wave functions with characteristic  $p = e^{i\alpha} y^k$ . (Russian) **85e:30085**
- Qin, Tie Hu The existence of global smooth solutions for Cauchy problems of first-order quasilinear partial differential equations. (Chinese. English summary) **85j:35045**
- Taniguchi, Kasuo Multiproducts of Fourier integral operators and the fundamental solution for a hyperbolic system with involutive characteristics. **85e:35131**

### 35L50 First-order systems, boundary value problems

- Georgiev, V. S. Disappearing solutions of symmetric strictly hyperbolic systems. **85h:35141**
- Greenberg, J. M. (with Li, Da Qian) The effect of boundary damping for the quasilinear wave equation. **85k:35138**
- Kirilich, V. M. A nonclassical boundary value problem for a two-dimensional first-order hyperbolic system with discontinuous coefficients. (Russian) (See **85k:35001**)
- Li, Da Qian See Greenberg, J. M., **85k:35138**
- Potapov, M. M. A generalized solution of a mixed problem for a first-order semilinear hyperbolic system. (Russian) **85f:35135**
- Smoczyński, Piotr Semilinear mixed problem for hyperbolic system of equations in two independent variables within the class of measurable solutions. (Russian summary) **85k:35139**
- Stanomir, D. Hyperbolic systems. Power conservation law and time decay of energy. **85a:35056**

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- Higdon, Robert L. Boundary conditions for suppressing rapidly moving components in hyperbolic systems. **85f:65119**

### 35L55 Higher-order hyperbolic systems

- Gourdin, Daniel (with Mechab, Mustapha) Systèmes faiblement hyperboliques à caractéristiques de multiplicité variable. (English summary) [Weakly hyperbolic systems with characteristics of variable multiplicity] **85k:35140**
- Kajitani, Kunihiko Cauchy problem for nonstrictly hyperbolic systems in Gevrey classes. **85h:35142**
- Kovachev, V. Kh. Microlocal parametrix for the Cauchy problem for hyperbolic symmetric systems with symplectic multiple characteristics. II. **85d:35073**
- Man'kovskii, A. A. The first mixed problem for hyperbolic systems. I. (Russian) **85b:35033a**
- The first mixed problem for hyperbolic systems. II. (Russian) **85b:35033b**
- Mechab, Mustapha See Gourdin, Daniel, **85k:35140**
- Nishitani, Tatsuo Energy inequality for nonstrictly hyperbolic operators in the Gevrey class. **85d:35074**

secondary classifications (35L55)

- DiPerna, Ronald J. Convergence of the viscosity method for isentropic gas dynamics. **85i:35118**

### 35L60 First-order nonlinear equations and systems

- Belyakov, N. M. Degree of decrease of periodic solutions of a quasilinear equation. (Russian) **85i:35093**
- Crandall, Michael G. Viscosity solutions of Hamilton-Jacobi equations. **85b:35034**
- Goldberg, V. N. Convergence of the solution of a singularly perturbed mixed problem for a hyperbolic system on the plane in the case of branching of the solution of the degenerate problem. III. (Russian) **85k:35141**
- Hamdache, Kamel Existence globale et comportement asymptotique pour des systèmes hyperboliques semi-linéaires en plusieurs variables d'espaces. (English summary) [Global existence and asymptotic behavior for semilinear hyperbolic systems in several space variables] **85f:35136**
- Hunter, John K. (with Keller, Joseph B.) Weakly nonlinear high frequency waves. **85h:35143**
- Keller, Joseph B. See Hunter, John K., **85h:35143**
- Shi, Jia Hong On the global solutions of first-order quasilinear equations. (Chinese) **85f:35137**
- Veiga, Maria-Fernanda Régularité de la solution et de l'opérateur de scattering pour un système hyperbolique semi-linéaire en une variable d'espace. (English summary) [Regularity of the solution and the scattering operator for a semilinear hyperbolic system in one space variable] **85k:35142**

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- Briggs, William L. (with Newell, A. C.; Saria, Talib) Focusing: a mechanism for instability of nonlinear finite difference equations. **85f:65086**
- Ishii, Hitoshi Uniqueness of unbounded viscosity solution of Hamilton-Jacobi equations. **85h:35057**
- Jerome, Joseph W. Quasilinear hyperbolic and parabolic systems: contractive semidiscretizations and convergence of the discrete viscosity method. **85e:35044**
- Kalyakin, L. A. Long-wave asymptotics of the solution of a hyperbolic system of equations. (Russian) **85k:35031**
- Lions, Pierre-Louis Existence results for first-order Hamilton-Jacobi equations. (French summary) **85j:35043**
- Maslov, V. P. (with Omel'yanov, G. A.) Conditions of Hugoniot type for infinitely narrow solutions of the simple wave equation. (Russian) **85j:35175**
- Newell, A. C. See Briggs, William L.; et al., **85f:65086**
- Omel'yanov, G. A. See Maslov, V. P., **85j:35175**
- Petrov, N. S. Asymptotic properties of the solution of the Cauchy problem for a first-order quasilinear equation. (Russian) **85i:35019**
- Saria, Talib See Briggs, William L.; et al., **85f:65086**
- Vichnevetsky, R. The energy flow equation. **85k:65074**
- Volkov, L. G. On the regularity of one-dimensional elastic waves in an incompressible isotropic material. **85e:73017**
- Zhukov, M. Yu. A nonstationary model of isotachophoresis. (Russian) **85i:78026**

## 35L65 Conservation laws [See also 76-XX.]

- Ching, Kuo Shun The structure of solutions of a single conservation law. 85d:35075
- Dafermos, C. M. Hyperbolic systems of conservation laws. 85h:35144
- DiPerna, Ronald J. Conservation laws and the weak topology. 85h:35145
- Li, Cai Zhong (with Liu, Tai Ping) Asymptotic states for hyperbolic conservation laws with a moving source. 85a:35057
- Liu, Tai Ping (with Pierre, M.) Source-solutions and asymptotic behavior in conservation laws. 85i:35094
- See also Li, Cai Zhong, 85a:35057
- Majda, Andrew  $\star$  Compressible fluid flow and systems of conservation laws in several space variables. 85e:35077
- Pazin, G. N. (with Tupchiev, V. A.) Existence of a generalized solution of the Cauchy problem for a system of two quasilinear hyperbolic equations without convexity conditions. (Russian) 85d:35076
- Pego, Robert L. Linearized stability of extreme shock profiles in systems of conservation laws with viscosity. 85e:35078
- Stable viscosities and shock profiles for systems of conservation laws. 85f:35138
- Pierre, M. See Liu, Tai Ping, 85i:35094
- Strumia, A. Some remarks on conservative symmetric-hyperbolic systems governing relativistic theories. (French summary) 85h:35035
- Tartar, Luc The compensated compactness method applied to systems of conservation laws. 85e:35079
- Tupchiev, V. A. See Pazin, G. N., 85d:35076
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- Brenier, Yann Résolution d'équations d'évolution quasilineaires en dimension  $N$  d'espace à l'aide d'équations linéaires en dimension  $N + 1$ . [Solving quasilinear evolution equations in spatial dimension  $N$  by means of linear equations in dimension  $N + 1$ ] 85f:35117
- Giga, Yoshikazu (with Miyakawa, Tetsuro) A kinetic construction of global solutions of first order quasilinear equations. 85g:35017
- Hagan, Robert Michael, Jr. (with Slemrod, Marshall) The viscosity-capillarity criterion for shocks and phase transitions. 85i:70033
- Harten, Amiram (with Hyman, James M.) Self-adjusting grid methods for one-dimensional hyperbolic conservation laws. 85g:65111
- (with Lax, Peter D.; van Leer, Bram) On upstream differencing and Godunov-type schemes for hyperbolic conservation laws. 85h:65188
- On a class of high resolution total-variation-stable finite-difference schemes. 85f:65085
- Hyman, James M. See Harten, Amiram, 85g:65111
- Lax, Peter D. See Harten, Amiram; et al., 85h:65188 and 85f:65085
- van Leer, Bram See Harten, Amiram; et al., 85h:65188
- Miyakawa, Tetsuro See Giga, Yoshikazu, 85g:35017
- Olver, Peter Group theoretic classification of conservation laws in elasticity. 85e:73012
- Conservation laws and null divergences. 85a:50092
- Conservation laws in elasticity. I. General results. 85i:73010a
- Conservation laws in elasticity. II. Linear homogeneous isotropic elastostatics. 85i:73010b
- Pimbley, George H. On solving quasilinear systems using semigroups and the Trotter product formula. (See 85k:00008)
- Slemrod, Marshall See Hagan, Robert Michael, Jr., 85i:70033
- Stanolir, D. Hyperbolic systems power conservation law for harmonic time variation. 85k:35136
- Tartar, Luc Compacité par compensation: résultats et perspectives. (English summary) [Compensated compactness: results and perspectives] 85j:35015
- Vila, Jean-Paul Systèmes de lois de conservation, schémas quasi d'ordre 2 et condition d'entropie. (English summary) [Systems of conservation laws, quasi-second-order numerical schemes and the entropy condition] 85h:65202

## 35L67 Shocks and singularities

- Boillat, Guy Limitation des vitesses de choc quand la densité d'énergie est convexe et les contraintes involutives. (English summary) [Limitation of shock velocities when energy is convex and constraints are involutive] 85a:35058
- Kraaijshchikova, E. A. Diffraction of a weak shock wave by a plate moving near a plane boundary. (Russian) 85k:35143
- Lorens, Jens An elementary introduction to and analytic properties of some shock problems. 85g:35078a
- Discretization of conservation laws and numerical dissipation. 85g:35078b
- Iterative solution of nonlinear difference equations for shock problems. 85g:35079
- Majda, Andrew The existence of multidimensional shock fronts. 85f:35139
- Malek-Madani, Resa (with Nohel, John A.) Formation of singularities for a conservation law with memory. 85b:35036
- Nohel, John A. See Malek-Madani, Resa, 85b:35036
- Taniuti, Tosiya A theory of weak shocks. 85e:35080

## secondary classifications (35L67)

- Carini, Giovanni Shock waves in the relativistic dynamics of a heat-conducting ideal fluid. (Italian) 85c:76074
- Cox, Edward A. (with Mortell, M. P.) The evolution of resonant oscillations in closed tubes. (German summary) 85a:76080
- Hasegawa, Mahmud The structure of shock waves in magnetohydrodynamics. 85i:76054
- Hunter, John K. (with Keller, Joseph B.) Weakly nonlinear high frequency waves. 85h:35143
- Keller, Joseph B. See Hunter, John K., 85h:35143
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- Pego, Robert L. Stable viscosities and shock profiles for systems of conservation laws. 85f:35138
- (Prasad, Mohan) See Sharma, V. D., 85m:76080
- Prasad, Mohan See Ramanathan, T. M.; et al., 85k:76022
- Ramanathan, T. M. (with Prasad, Mohan; Ravindran, R.) On the propagation of a weak shock front: theory and application. 85k:76022
- Ravindran, R. See Ramanathan, T. M.; et al., 85k:76022
- Ruggeri, Tommaso Symmetric-hyperbolic system of conservative equations for a viscous heat conducting fluid. 85d:76016
- (Shankar, Rama) See Sharma, V. D., 85m:76080
- Sharma, V. D. (with Shyam, Radhe) A note concerning: "Corrigendum to: 'On the nonuniform propagation of weak discontinuities in magnetogasdynamics' [Arch. Rational Mech. Anal. 75 (1980/81), no. 2, 169-174; MR 82f:76043]" [ibid. 76 (1982), no. 4, 397-398; MR 83f:76105] by R. Shankar and M. Prasad. 85m:76080
- Shyam, Radhe See Sharma, V. D., 85m:76080
- Wang, Jing Hua Study of the global solutions for a nonlinear hyperbolic system. 85j:35117

## 35L70 Second-order nonlinear equations and systems

- Asakura, Fumio Existence of spherically symmetric global solution to the semilinear wave equation  $u_{tt} - \Delta u = au^2 + b(\nabla u)^2$  in five space dimensions. 85k:35144
- Beals, Michael Self-spreading and strength of singularities for solutions to semilinear wave equations. 85e:35057
- Nonlinear wave equations with data singular at one point. 85f:35140
- Bloom, Frederick On the damped nonlinear evolution equation  $w_{tt} = \sigma(w)_{xx} - yw_t$ . 85f:35141
- Caradonna, Gaetano Systems of second-order hyperbolic nonlinear partial differential equations in two independent variables. (Italian) 85i:35095
- Chen, Shu Xing The reflection and interaction of the singularities of solutions to semilinear wave equation in higher space dimension. 85k:35145
- Firmani, Bruno Conditions for the regularity of the solution of the Dirichlet problem for a second-order hyperbolic equation. (Italian. English summary) 85b:35037
- Guo, Bo Ling Global solutions to the initial value problem for the three-dimensional FDS nonlinear wave equations. (Chinese) (Not in MR)
- Haraux, A. Some new results on nonlinear wave equations in a bounded domain. (French summary) 85h:35146
- John, Fritz (with Klainerman, S.) Almost global existence to nonlinear wave equations in three space dimensions. 85k:35147
- Keller, Clayton Stable and unstable manifolds for the nonlinear wave equation with dissipation. 85j:35118
- Klainerman, S. Weighted  $L^\infty$  and  $L^1$  estimates for solutions to the classical wave equation in three space dimensions. 85k:35146
- See also John, Fritz, 85k:35147
- Kos'mina, E. S. Approximation of the solution of a nonlinear hyperbolic equation with a functional coefficient by means of solutions of an almost linear hyperbolic equation. (Russian) 85f:35142
- Lur'kin, N. A. Existence theorems for quasilinear pseudohyperbolic equations. (Russian) 85g:35080
- On some classes of nonlinear hyperbolic equations. 85i:35096
- A one-sided problem for a nonlocal quasilinear hyperbolic equation of elasticity theory. (Russian) 85j:35119
- Ponce, Gustavo Lower bounds for the life span of solutions of nonlinear wave equations in higher dimensions. 85k:35146
- Rauch, Jeffrey B. (with Reed, Michael C.) Ray-like solutions of semilinear wave equations. 85j:35120
- Reed, Michael C. See Rauch, Jeffrey B., 85j:35120
- Serova, M. M. Nonlinear wave equations that are invariant with respect to the algebra  $A(n-1) \oplus D$ . (Russian) (See 84g:00006) (Not in MR)
- Shibata, Yoshihiro (with Tsutsumi, Yoshio) Local existence of  $C^\infty$ -solution for the initial-boundary value problem of fully nonlinear wave equation. 85h:35147
- Sideris, Thomas C. Global behavior of solutions to nonlinear wave equations in three dimensions. 85e:35081
- Simon, Jacques C. H. A wave operator for a nonlinear Klein-Gordon equation. 85f:35143
- Sobolev, S. I. Uniqueness theorem for statistical solutions of a nonlinear hyperbolic equation. (Russian) 85i:35097
- Spagnolo, S. Solutions analytiques d'une équation non linéaire de type hyperbolique. [Analytic solutions of a nonlinear equation of hyperbolic type] 85i:35096
- Tsutsumi, Yoshio See Shibata, Yoshihiro, 85h:35147
- Vityuk, A. N. Solvability of a boundary value problem for a system of hyperbolic equations. (Russian) (See 85k:35001)
- Weyer, Jürgen Regular solutions of wave equations containing nonlinearities of the type  $L\Phi L$ . 85f:35144

## secondary classifications (35L70)

- Aguirre, J. (with Peral Alonso, Irene) Existence of periodic solutions for a class of nonlinear equations. 85k:35012
- Alinhac, S. (with Métivier, G.) Propagation of analyticity for solutions of nonlinear partial differential equations. 85e:35025
- Basley, N. W. (with Weinsacht, Richard J.) Bifurcation of periodic solutions for wave equations with scalar nonlinearities. 85k:35013
- Brenner, Philip On space-time means and everywhere defined scattering operators for nonlinear Klein-Gordon equations. 85h:35183
- Brüll, Ludger On the existence theory for nonlinear Schrödinger and wave equations without Lipschitz-estimates. 85k:35036
- Cazenave, T. (with Haraux, A.) Propriétés oscillatoires des solutions de certaines équations des ondes semi-linéaires. (English summary) [Oscillatory properties of the solutions to some semilinear wave equations] 85k:35011

- Craig, Walter A bifurcation theory for periodic solutions of nonlinear dissipative hyperbolic equations. **85c:35018**
- Ebihara, Yukiyoichi Some evolution equations with linear and quasilinear strong dissipation. **85k:35136**
- Engelbrecht, Jüri Recent results on nonlinear waves and inverse problems in acoustoelasticity. **85a:73036**
- Guo, Be Ling Initial-boundary value problem for one class of system of multidimensional nonlinear Schrödinger equations with wave operator. **85a:35083**
- Global solutions for a class of systems of multidimensional nonlinear wave equations. (Chinese) **85k:35205**
- Hale, Jack Infinite-dimensional dynamical systems. **85d:58036**
- Harsanyi, A. See Casanave, T., **85k:35011**
- Heard, Melvin L. A quasilinear hyperbolic integro-differential equation related to a nonlinear string. **85j:45025**
- Hsiao, George C. (with Weinacht, Richard J.) Singular perturbations for a semilinear hyperbolic equation. **85k:35015**
- Kim, Jong Uhn Solutions to the equations of one-dimensional viscoelasticity in BV. **85c:73030**
- Kreith, Kurt (with Kusano, Takashi; Yoshida, Norio) Oscillation properties of nonlinear hyperbolic equations. **85k:35012**
- Kusano, Takashi See Kreith, Kurt; et al., **85c:35012**
- Mawhin, J. Nonlinear functional analysis and periodic solutions of semilinear wave equations. **85d:35012**
- Métivier, G. See Alinhac, S., **85c:35025**
- Nishihara, Kenji See Yamaguchi, Masaru, **85f:35028**
- Noakes, David R. The initial value formulation of higher derivative gravity. **85c:83067**
- Pecher, Hartmut Nonlinear small data scattering for the wave and Klein-Gordon equation. **85k:35165**
- Peral Alonso, Iremio See Aguilera, J., **85k:35012**
- Petselov, Hana (with Štěrý, Milan) Time-periodic solutions of telegraph equations in  $n$  spatial variables. (Russian summary) **85k:35014**
- Rabinowitz, Paul H. Large amplitude time periodic solutions of a semilinear wave equation. **85m:35008**
- Rybickowski, Krzysztof P. Trajectories joining critical points of nonlinear parabolic and hyperbolic partial differential equations. **85f:35027**
- Segal, I. E. Nonlinear wave equations. (See **85d:58001**)
- Štěrý, Milan See Petselov, Hana, **85k:35014**
- Tsutsumi, Masayoshi Nonrelativistic approximation of nonlinear Klein-Gordon equations in two space dimensions. **85c:35211**
- Vellin, A. A. Investigation of the classical solution of an inverse two-dimensional boundary value problem for second-order quasilinear hyperbolic equations. (Russian. English and Azerbaijani summaries) **85k:35230**
- Weinacht, Richard J. See Basley, N. W., **85k:35013** and Hsiao, George C., **85k:35015**
- Willem, Michel Remarks on the dual least action principle. (German and Russian summaries) **85c:49026**
- Yamaguchi, Masaru (with Nishihara, Kenji) Almost periodic and asymptotically almost periodic solutions of some wave equations with quasiperiodic coefficients. **85f:35028**
- Yoshida, Norio See Kreith, Kurt; et al., **85c:35012**

### 35L75 Higher ( $> 2$ ) order nonlinear equations and systems

- Kačur, Josef Application of Rothe's method to perturbed linear hyperbolic equations and variational inequalities. **85k:35149**
- Mukhyev, B. The Dirichlet problem for a third-order nonlinear equation. (Russian) **85k:35148**
- Nania, Luciana On an abstract nonlinear problem. (Italian. English summary) **85j:35121**

#### secondary classifications (35L75)

- Kato, Hisako (with Nakao, Mitsuhiro) Existence of strong and smooth periodic solutions of some nonlinear evolution equations. **85k:35011**
- Nakao, Mitsuhiro See Kato, Hisako, **85d:35011**

### 35L80 Equations and systems of degenerate type

- Amano, Kasuo (with Nakamura, Gen) Branching of singularities for degenerate hyperbolic operator and Stokes phenomena. III. **85c:35082a**
- (with Nakamura, Gen) Branching of singularities for degenerate hyperbolic operator and Stokes phenomena. IV. **85c:35082b**
- Eldeshaev, T. A boundary value problem for a hyperbolic equation with characteristic degeneration of type and order in the interior of a domain. (Russian) (See **85d:00009**)
- Fu, Hong Yuan See Zhou, Yu Lin, (Not in MR)
- Guan, Chu Quan (with Sun, He Sheng) The Cauchy problem for nonlinear degenerate hyperbolic equations. (Chinese) (Not in MR)
- (with Sun, He Sheng) On the Cauchy problem for nonlinear degenerate hyperbolic equation. **85g:35061**
- Jamoussas, Algimantas On the Cauchy problem for a degenerate hyperbolic system. (Russian) **85k:35150**
- Khe Kan Cher Some boundary value problems for a class of degenerate hyperbolic equations. (Russian) **85f:35145**
- Kur'min, A. G. The Cauchy problem with degeneration of the type of the equation at one boundary point. (Russian. English summary) **85c:35063**
- Nakamura, Gen See Amano, Kasuo, **85c:35082a** and **85c:35082b**
- Pastukhova, S. E. A problem with degenerate directional derivative for a hyperbolic equation. (Russian) (See **85k:35001**)
- Shinkai, Kenso Branching of singularities for a degenerate hyperbolic system. **85j:35122**
- Sun, He Sheng See Guan, Chu Quan, **85g:35061** and (Not in MR)
- Teut, O. M. A linear problem for a system of hyperbolic type in a characteristic quadrangle. (Russian) **85a:35059**
- Wang, Chuan Fang The discrete phenomena for the mixed problem. **85i:35099**

- Zhemukhov, Kh. K. The Cauchy problem for a fourth-order degenerate quasilinear hyperbolic equation. (Russian) **85k:35149**
- Zheng, Xing Li Initial value problems for a class of degenerate equations. (Chinese) (Not in MR)

On the initial value problem of a degenerate equation. (Chinese) **85c:35084**

On initial value problem of a class of degenerate equation. **85f:35146**

- Zhou, Yu Lin (with Fu, Hong Yuan) Semilinear degenerate hyperbolic-quasihyperbolic paired systems of equations. (Chinese) (Not in MR)

#### secondary classifications (35L80)

- Balkusiev, K. B. A mixed problem for a higher-order equation that degenerates on the boundary of the domain. (Russian) **85j:35098**
- Durdyev, N. T. An analogue of the Dirichlet problem for a fourth-order equation. (Russian) **85a:35061**
- Khe Kan Cher Nonuniqueness of solutions of some boundary value problems for degenerate equations. (Russian) **85j:35047a**
- Erratum: "Nonuniqueness of solutions of certain boundary value problems for degenerate equations". (Russian) **85j:35047b**
- Semenov, S. M. See Sobolevskii, P. E., **85c:34066** and **(85k:35001)**
- Shishataki, S. P. ★ Проблема единственности решения задач Коши для вырождающихся уравнений. (Russian) [The problem of the uniqueness of solutions of Cauchy problems for degenerate equations] **85k:35002**
- Sobolevskii, P. E. (with Semenov, S. M.) A new method of investigation of degenerate hyperbolic equations. (Russian) (See **85k:35001**)
- (with Semenov, S. M.) An approach to the investigation of degenerate hyperbolic equations. (Russian) **85c:34066**

### 35L85 Unilateral problems; variational inequalities [See also 35R35, 49A29]

- Ebihara, Yukiyoichi Modified variational inequalities to semilinear wave equations. **85d:35077**

#### secondary classifications (35L85)

- Gerlach, Jürgen Two linearized models for a hyperbolic free boundary value problem. (German summary) **85m:78045**
- Kuttler, Kenneth Degenerate variational inequalities of evolution. **85m:49014**

### 35L99 None of the above, but in this section

- Adomian, George A. Partial differential equations with integral boundary conditions. **85c:35058**
- Coonan, James Hyperbolic differential equations of generalized order. **85j:35123**
- Filippov, V. M. Variational method of solution of a hyperbolic equation with boundary value conditions on the entire boundary of the domain. (Russian) (See **85c:00006**)
- Gaveau, Bernard Representation formulas of the Cauchy problem for hyperbolic systems generalizing Dirac system. **85k:35151**
- Geng, Guang See Ling, Ling; et al., **85g:35082**
- Göfberg, V. N. Continuous dependence on initial conditions of solutions of mixed problems for hyperbolic systems on a plane. (Russian) **85k:35152**
- Kirlich, V. M. See Mel'nik, Z. O., **85j:35124**
- Ling, Ling (with Zhu, Qian; Geng, Guang; Liu, Jia Pei) A proof of the Asgeirsson formula for the spherical mean value using the elementary solution of the ultrahyperbolic equation. (Chinese) **85g:35082**
- Liu, Jia Pei See Ling, Ling; et al., **85g:35082**
- Mel'nik, Z. O. (with Kirlich, V. M.) Problems without initial conditions with integral constraints for hyperbolic equations and systems on the line. (Russian) **85j:35124**
- Petrov, A. N. Well-posedness of initial-boundary value problems for one-dimensional equations of the interpenetrating motion of perfect gases. (Russian) **85k:35150**
- Potapov, A. I. See Vesnikitskii, A. I., **85k:35153**
- Vesnikitskii, A. I. (with Potapov, A. I.) Transition processes in one-dimensional systems with moving boundaries. (Russian) **85k:35153**
- Zhu, Qian See Ling, Ling; et al., **85g:35082**

#### secondary classifications (35L99)

- Ames, W. F. See Fusco, D.; et al., **85j:35013**
- Besack, P. R. Riemann's function has an exponential bound. **85d:26004**
- Bors, Dan A Peano existence theorem for solutions of a differential system with set functions. (See **85g:00019**)
- Bublik, B. N. (with Nakonechnyi, A. G.; Chernyak, S. I.) Numerical minimax estimation of functionals defined on states of hyperbolic equations. (Russian) **85j:65023**
- Bukhgeim, A. L. (with Kardakov, V. B.) Solution of an inverse problem for an equation of elastic waves. The finite-dimensional case. (Russian) **85k:35227**
- Cattaneo, C. ★ Elementi di teoria della propagazione ondosa. (Italian) [Elements of the theory of wave propagation] **85f:78080**
- Chernyak, S. I. See Bublik, B. N.; et al., **85j:65023**
- Cohen, Harley (with Thomas, R. S. D.) Plane wave propagation and evolution for quasilinear hyperbolic systems. **85c:35103**
- Dassios, George (with Grillakis, Manoussos) Dissipation rates and partition of energy in thermoelasticity. **85i:73032**
- Donato, A. See Fusco, D.; et al., **85j:35013**
- Dzhuravaev, A. Some new mixed problems. (Russian) **85k:35047**
- Florin, Helmut (with Pügel, Jürgen; Wallner, Herbert) ★ Darstellungen von Riemannfunktionen für  $(\partial^2 w / \partial x_1 \partial x_2 \cdots \partial x_n) + C(x_1, x_2, \dots, x_n)w = 0$ . (German) [Representations of Riemann functions for  $(\partial^2 w / \partial x_1 \partial x_2 \cdots \partial x_n) + C(x_1, x_2, \dots, x_n)w = 0$ ] **85c:35023b**
- Fusco, D. (with Donato, A.; Ames, W. F.) Group analysis for a linear hyperbolic equation arising from a quasilinear reducible system. **85j:35013**



- Gastaldi, L. (with Tomarelli, Franco) ★ A nonlinear hyperbolic Cauchy problem arising in the dynamic of cardiac muscle. 85g:92010
- Grillakis, Manoussos See Dassios, George, 85i:73032
- Grundland, A. M. (with Zelazny, Roman) Simple waves in quasilinear hyperbolic systems. I. Theory of simple waves and simple states. Examples of applications. 85f:35177
- (with Zelazny, Roman) Simple waves in quasilinear hyperbolic systems. II. Riemann invariants for the problem of simple wave interactions. 85f:35178
- Hallsoy, M. Similarity solution for the Ernst equation with electromagnetic fields. 85d:83048
- Hunter, John K. (with Keller, Joseph B.) Erratum: "Weak shock diffraction" [Wave Motion 6 (1984), no. 1, 79-89; MR 84m:76066]. 85f:76081
- Illner, Reinhard The Broadwell model for initial values in  $L^1_+$ (R). 85k:35206
- (Jeffrey, Alan) See Taniuti, Tosiya, 85f:76038
- Kachalov, A. P. Space-time ray method for waves of small deformation in a nonlinear elastic medium. (Russian. English summary) 85m:73020
- Kardakov, V. B. See Bukhgelm, A. L., 85k:35227
- Keller, Joseph B. See Hunter, John K., 85f:76081
- Levine, Howard A. (with Lieberman, Gary M.) Quenching of solutions of parabolic equations with nonlinear boundary conditions in several dimensions. 85i:35085b
- The quenching of solutions of linear parabolic and hyperbolic equations with nonlinear boundary conditions. 85i:35085a
- Lieberman, Gary M. See Levine, Howard A., 85i:35085b
- McIntosh, Alan G. R. Square roots of operators and applications to hyperbolic PDEs. 85d:47016
- Medeuf, E. U. Asymptotic behavior of the solution of a singularly perturbed problem with initial jump. (Russian) 85h:35050
- Meerson, B. I. See Vainberg, Yu. R.; et al., 85f:76039
- Nakonechnyi, A. G. See Bublik, B. N.; et al., 85j:65023
- Nishihara, Katsunobu See Taniuti, Tosiya, 85f:76038
- (Pluchino, Salvatore) See Cattaneo, C., 85f:76080
- Pingel, Jürgen See Florian, Helmut; et al., 85a:35023b
- Romanenko, R. V. The accuracy of reconstructing the coefficients of a hyperbolic system of equations on the whole axis from incomplete scattering data. (Russian) 85j:35195
- Ruggeri, Tommaso Generators of hyperbolic heat equation in nonlinear thermoelasticity. 85e:73066
- Sandefur, James T., Jr. Asymptotic equipartition of energy for equations of elasticity. 85a:73025
- Sasorov, P. V. See Vainberg, Yu. R.; et al., 85f:76039
- Shen, C. N. On the extremum of bilinear functional for hyperbolic type PDE. (See 85b:00006)
- Solikhov, O. Differential equations for an improper integral. (Russian. Tajiki summary) 85f:58117
- Straburyski, Jan Existence of solutions of the Goursat problem for some functional-differential equations. 85k:35220
- Svendsen, E. C. Smooth solutions of initial-value problems in regions with corners. 85k:35023
- Taniuti, Tosiya (with Nishihara, Katsunobu) ★ Nonlinear waves. 85f:76038
- Thomas, R. S. D. See Cohen, Harley, 85e:35103
- Tomarelli, Franco See Gastaldi, L., 85g:92010
- Vainberg, Yu. R. (with Meerson, B. I.; Sasorov, P. V.) Resonance excitation of nonlinear dispersive waves. 85f:76039
- Wallner, Herbert See Florian, Helmut; et al., 85a:35023b
- Xu, Chao Jiang The fundamental solutions of the Cauchy problem for a class of hyperbolic pseudodifferential operators. (Chinese. English summary) 85h:35236
- Yao, Yun Long A structure on the unbounded control. (Chinese) 85k:47067
- Zelazny, Roman See Grundland, A. M., 85f:35177 and 85f:35178
- 35M05 Equations and systems of mixed (Tricomi, etc.) or composite type {For degenerate types, elliptic, see 35Jxx, parabolic, see 35Kxx, hyperbolic, see 35Lxx, etc.}**
- Abdrakhmanov, M. A. Construction and estimation of the Green matrix of a model problem for a system of equations of mixed type. (Russian) 85f:35147
- Aldashev, S. A. Uniqueness of the solution of the Darboux and Tricomi problems. (Russian) 85a:35060
- Alt, Hans Wilhelm (with Luckhaus, Stephan) Quasilinear elliptic-parabolic differential equations. 85c:35059
- Azis, A. K. (with Schneider, Manfred) Weak solutions of the Gellerstedt and the Gellerstedt-Neumann problems. 85m:35043
- Berdyshev, A. S. A boundary value problem of Bitsadze-Samar'skiĭ type for an equation of mixed parabolic-hyperbolic type. (Russian) 85k:35154
- Chekmarev, T. V. The Tricomi problem in a domain bounded by arcs of characteristics and by half lines which are perpendicular to the line of degeneracy. (Russian) 85i:35100
- Chen, De Quan See Ji, Xin Hua, 85c:35060
- Colape, G. A boundary value problem for an elliptic-parabolic equation of order 2k. (Italian) 85m:35044
- Durdyev, N. T. An analogue of the Dirichlet problem for a fourth-order equation. (Russian) 85a:35061
- Ėgamberdiev, U. See Yakubov, S., 85h:35154
- Glazatov, S. A boundary value problem for a nonlinear equation of mixed type. (Russian) 85k:35155
- Gvazava, D. K. Some classes of quasilinear equations of mixed type. (Russian) 85g:35083
- Iyagil'din, A. Kh. A boundary value problem for a third-order degenerate parabolic-hyperbolic equation. (Russian) 85j:35125
- Ji, Xin Hua (with Chen, De Quan) Tricomi's problems of nonhomogeneous equation of mixed type in real projective plane. 85c:35060
- Kal'menov, T. Sh. Strong solutions of the Darboux and Tricomi problems. (Russian) 85j:35126
- Kapustin, N. Yu. Generalized solvability of the Tricomi problem for a parabolic-hyperbolic equation. (Russian) 85j:35127
- Khubanov, K. I. Some third-order boundary value problems for equations of parabolic-hyperbolic type. (Bulgarian. English and Russian summaries) 85k:35156
- Kkhan, M. R. A nonlocal problem for the Lavrent'ev-Bitsadze equation. (Russian) 85h:35151
- Kulashanov, S. K. The spectrum of a mixed problem for an equation of mixed type. (Russian) 85j:35128
- Lar'kin, N. A. (with Novikov, V. A.; Yanenko, N. N.) ★ Нелинейные уравнения переменного типа. (Russian) [Nonlinear equations of variable type] 85h:35152
- Li, Da Qian (with Yu, Wen Ci; Shen, Wei Xi) First initial-boundary value problems for quasilinear hyperbolic-parabolic coupled systems. 85k:35157
- Luckhaus, Stephan See Alt, Hans Wilhelm, 85c:35059
- Malovichko, V. A. On the theory of boundary value problems for equations of mixed-composite type. (Russian) 85d:35078
- Mamashanov, M. Solution of a boundary value problem for a third-order equation of parabolic-hyperbolic type. (Russian) 85i:35101
- Marchenko, V. V. (with Nosov, V. A.) The Dirichlet problem for an elliptic-hyperbolic equation in an unbounded domain. I. (Russian) 85j:35129
- Mei'nikova, A. I. See Shvet'skil, M. V., 85j:35133
- Müller-Rettkowski, A. Existence of a characteristic boundary value problem for an equation of mixed type in three-dimensional space. 85f:35148
- Existenz und Eindeutigkeit für Lösungen des Neumann-Tricomi-Problems im  $\mathbb{R}^2$ . (English summary) [Existence and uniqueness of solutions for the Neumann-Tricomi problem in  $\mathbb{R}^2$ ] 85f:35149
- Nosov, V. A. See Marchenko, V. V., 85j:35129
- Novikov, V. A. See Lar'kin, N. A.; et al., 85h:35152
- Nurublov, M. The Dirichlet problem for a multidimensional system of composite type. (Russian. Tajiki summary) 85j:35130
- Parenti, Cesare Parametrix for an elliptic-hyperbolic operator. 85i:35102
- Pleshchinskaya, I. E. A problem with displacements for a system of partial differential equations of mixed type. (Russian) 85f:35150
- Polichka, N. P. The problem  $M$  for the Lavrent'ev-Bitsadze equation. (Russian) 85k:35158
- Popivanov, N. I. Boundary value problems for hyperbolic-parabolic equations. (Russian) 85i:35103
- Rassias, John M. The survey on equations of mixed type. (See 85d:34002)
- The extended Bitsadze-Lavrent'ev-Tricomi problem with a circular parabolic line of degeneracy. 85d:35079
- The extended Bitsadze-Lavrent'ev problem with two parabolic lines of degeneracy and two elliptic arcs in the Euclidean plane. 85h:35153
- Romanko, V. K. Eigenvalues of boundary value problems for certain equations which change type. (Russian) 85a:35062
- Romashevskaya, E. F. Singular cases of the Darboux problem for a system of equations of the type of the Tricomi equations. (Russian) 85f:35151
- Sabitov, K. B. A problem of Tricomi type for equations of mixed type with strong characteristic degeneration. (Russian) 85c:35085
- Salakhitdinov, M. S. On the theory of boundary value problems for equations of mixed type with one or two lines of degeneracy. (Russian) (See 85a:35003)
- (with Urinov, A. K.) Analogue of the Tricomi problem for an equation of mixed type with nonsmooth lines of degeneracy. (Russian) 85f:35152
- Saltykova, N. M. A generalization of a boundary value problem with shift for an equation of mixed type of the second kind. (Russian) 85j:35131
- (with Smirnov, M. M.) Tricomi problems for an equation of mixed type of the second kind in an unbounded domain. (Russian. English summary) 85i:35104
- Schneider, Manfred Eindeutigkeitsaussagen für das Tricomi-Problem im  $\mathbb{R}^2$  für eine Klasse nichtlinearer Gleichungen gemischten Typs. (English summary) [On the uniqueness of the solution of the Tricomi problem in  $\mathbb{R}^2$  for a class of nonlinear equations of mixed type] 85j:35132
- See also Azis, A. K., 85m:35043
- Shen, Wei Xi See Li, Da Qian; et al., 85k:35157
- Shvet'skil, M. V. (with Mei'nikova, A. I.) The Dirichlet problem for an equation of mixed type in a special bounded domain. (Russian) 85j:35133
- Smirnov, M. M. A boundary value problem with shift for an equation of mixed-composite type of the second kind. (Russian) 85k:35159
- See also Saltykova, N. M., 85i:35104
- Sun, He Sheng On the equation of mixed type  $Au_{yy} - 2Bw_{yz} + Cw_{zz} + Dw_y + Ew_z = 0$ . (Chinese) 85d:35080
- Urinov, A. K. Some boundary value problems for an equation of mixed type with nonsmooth lines of degeneracy. (Russian) 85a:35063
- See also Salakhitdinov, M. S., 85f:35152
- Yakubov, S. (with Ėgamberdiev, U.) Some boundary value problems with an unknown boundary for mixed parabolic-hyperbolic equations of second and third orders. (Russian) 85h:35154
- Yanenko, N. N. See Lar'kin, N. A.; et al., 85h:35152
- Yu, Wen Ci See Li, Da Qian; et al., 85k:35157
- Zhegalov, V. I. A problem with several shifts for an equation of mixed-composite type. (Russian) 85g:35084
- Two problems with shifts for an equation of mixed-composite type. (Russian) 85f:35153
- Zheng, Song Mu Initial-boundary value problems for quasilinear hyperbolic-parabolic coupled systems in higher-dimensional spaces. 85g:35085

## secondary classifications (35M05)

- Durdyev, N. T. (with Orasov, M. B.) Completeness of the root functions in some eigenvalue problems for fourth-order equations of mixed type. (Russian) **85k:35167**
- Gakhramanov, P. F. Numerical solution of the Gellerstedt problem by the finite difference method. (Russian) **85g:65134**
- Kamylin, L. I. (with Khimchenko, B. N.) On investigations of the anisotropic strict extremum principle for second-order elliptic-parabolic equations. (Russian) **85h:35040**
- Khimchenko, B. N. See Kamylin, L. I., **85h:35040**
- Kirilenko, S. V. See Volkodavov, V. F., **(85g:34003)**
- Kislov, N. V. Boundary value problems for operator-differential equations of mixed type. (Russian) **85b:34008**
- Kus'min, A. G. The Cauchy problem with degeneration of the type of the equation at one boundary point. (Russian. English summary) **85e:35083**
- Miyatake, Sadao Integral representation of solutions for equations of mixed type in a half space. **85i:35026**
- Moisev, E. I. Approximation of the classical solution of the Darboux problem by smooth solutions. (Russian) **85k:35008**
- Mukhyev, B. The Dirichlet problem for a third-order nonlinear equation. (Russian) **85h:35148**
- Nakane, Shizuo Uniqueness and nonuniqueness in the Cauchy problem for a class of operators of degenerate type. II. **85j:35003**
- Uniqueness and nonuniqueness in the Cauchy problem for a class of operators of degenerate type. **85f:35006**
- Negrini, Paolo Regular points of cylindrical open subsets in a  $\beta$ -harmonic space. (Italian. English summary) **85d:31016**
- Orasov, M. B. Seeurdyev, N. T., **85k:35167**
- Pleshchinskaya, I. E. A problem of optimal control for a system of equations of mixed type. (Russian) **85k:49014**
- Rodino, Luigi On the Gervay wave front set of the solutions of a quasilinear degenerate equation. **85k:35054**
- Sun, He Sheng The problems of deformation of surfaces and the equations of mixed type  $w_{\eta\eta} + \operatorname{sgn} \eta w_{\xi\xi} + (M(\eta)/\eta^2)w = 0$ . (Chinese) **85b:53004**
- Tout, O. M. A linear problem for a system of hyperbolic type in a characteristic quadrangle. (Russian) **85a:35059**
- Volkodavov, V. F. (with Kirilenko, S. V.) Analogues of the Bitsadze-Samarskii problem for the wave equation and the Lavrent'ev-Bitsadze equation in unbounded domains. (Russian) (See **85g:34003**)
- Zanghirati, L. Iterates of a class of degenerate quasilinear operators. **85k:35055**
- Zheng, Xing Li Initial value problems for a class of degenerate equations. (Chinese) (Not in MR)
- On initial value problem of a class of degenerate equation. **85f:35146**

**35Nxx Overdetermined systems [See also 58G05, 58G07, 58Hxx.]****35N05 Constant coefficients**

- Brattli, Giuliano Solvability of overdetermined systems of PDE on cylinders of  $\mathbb{R}^3$ . (Italian. English summary) **85g:35006**
- Desin, A. A. Overdetermined boundary value problems. (Russian) **85k:35160**

## secondary classifications (35N05)

- Cattabriga, Lamberto On the surjectivity of differential polynomials on Gervay spaces. **85f:35046**
- Lies, Otto Propagation of singularities for global solutions of constant coefficient partial differential equations in the presence of growth-type restrictions at infinity. **85h:35055**
- Tarkhanov, N. N. Fundamental solutions of elliptic complexes and their applications. (Russian) **85c:58097**

**35N10 Variable coefficients, general**

- Nachovich, Mauro On weighted estimates for some systems of partial differential operators. **85i:35105**

## secondary classifications (35N10)

- Samborakii, S. N. Overdetermined elliptic boundary value problems with a parameter and parabolic boundary value problems. (Russian) **85h:58157**
- Trèves, François On the local solvability and the local integrability of systems of vector fields. **85j:35009**
- Hypoanalytic structures. **85e:32024**

**35N15  $\bar{\partial}$ -Neumann problem and generalizations; formal complexes [See also 32Fxx and 58G05.]**

- Saito, Tetsuo The globally analytic hypoellipticity of the  $\bar{\partial}$ -Neumann problem for some weakly pseudoconvex domains in  $\mathbb{C}^n$ . **85g:35087**
- Stanton, Nancy K. L'équation de la chaleur en plusieurs variables complexes. [The heat equation in several complex variables] **85e:35086**

## secondary classifications (35N15)

- Alahori, Takao The new Neumann operator associated with deformations of strongly pseudoconvex domains and its application to deformation theory. **85i:32032**
- A criterion for the Neumann type problem over a differential complex on a strongly pseudoconvex domain. **85e:32026**
- Castin, David W. Global regularity of the  $\bar{\partial}$ -Neumann problem. **85j:32033**
- Cumenge, Anne Extension dans des classes de Hardy de fonctions holomorphes et estimations de type "mesures de Carleson" pour l'équation  $\bar{\partial}$ . (English summary) [Extension in Hardy classes of holomorphic functions and "Carleson measure"-type estimates for the  $\bar{\partial}$ -equation] **85j:32005**

- D'Angelo, John Intersection theory and the  $\bar{\partial}$ -Neumann problem. **85h:32029**
- Darbo, Patrick W. On regularity of solutions of the  $\bar{\partial}$ -equation with growth on bounded pseudoconvex domains. (Italian summary) **85b:32028**
- Donnelly, Harold (with Fefferman, Charles)  $L^2$ -cohomology and index theorem for the Bergman metric. **85f:32029**
- Fefferman, Charles See Donnelly, Harold, **85f:32029**
- Frumin, I. D. Solution with estimates of the  $\bar{\partial}$ -equation in analytic polyhedra in general position. (Russian) **85b:32029**
- Harvey, Reese (with Polking, John C.) The  $\bar{\partial}$ -Neumann kernel in the ball in  $\mathbb{C}^n$ . **85j:32034**
- (with Polking, John C.) The  $\bar{\partial}$ -Neumann solution to the inhomogeneous Cauchy-Riemann equation in the ball in  $\mathbb{C}^n$ . **85e:32006**
- Heinemann, Dieter Uniform estimates for the  $\bar{\partial}$ -equation on pseudoconvex polyhedra or Stein manifolds. **85f:32032**
- Kohn, J. J. A survey of the  $\bar{\partial}$ -Neumann problem. **85e:32023**
- Lieb, Ingo (with Range, R. Michael) Integral representations on Hermitian manifolds: the  $\bar{\partial}$ -Neumann solution of the Cauchy-Riemann equations. **85h:32004**
- Polking, John C. See Harvey, Reese, **85e:32006** and **85j:32034**
- Range, R. Michael The  $\bar{\partial}$ -Neumann operator on the unit ball in  $\mathbb{C}^n$ . **85g:32026**
- See also Lieb, Ingo, **85h:32004**
- Stanton, Nancy K. (with Tartakoff, David S.) The heat equation for the  $\bar{\partial}$ -Laplacian. **85f:58114**
- Takegoshi, Kenoh Global regularity and spectra of Laplace-Beltrami operators on pseudoconvex domains. **85d:32037**
- Tartakoff, David S. See Stanton, Nancy K., **85f:58114**

**35N99 None of the above, but in this section**

## secondary classifications (35N99)

- Aubin, Thierry ★ Nonlinear analysis on manifolds. Monge-Ampère equations. **85j:58002**
- Boichu, D. (with Coeuré, G.) Integral representation of the Bergman kernel function and Ramadanov's conjecture. (Russian) **85f:32042b**
- (with Coeuré, G.) Sur le noyau de Bergman des domaines de Reinhardt. [On the Bergman kernel of Reinhardt domains] **85f:32042a**
- Coeuré, G. See Boichu, D., **85f:32042a** and **85f:32042b**
- Johnson, Joseph Order for systems of differential equations and a generalization of the notion of differential ring. **85i:12010**
- Leville, Guy (with Ramadanov, I. P.) On a complex Monge-Ampère equation. (Russian) **85k:32035**
- Ramadanov, I. P. See Leville, Guy, **85k:32035**

**35Pxx Spectral theory and eigenvalue problems [See also 47Axx, 47Bxx, 47F05.]**

- Garadshvili, A. A model problem connected with the problem of oscillations of a viscous incompressible fluid in an elastic vessel. (Russian. English summary) **85c:35061**
- Orasov, M. B. On the problem of normal oscillations of a viscous capillary fluid in a vessel. (Russian) **85c:35062**
- Osawa, Makoto Perturbation of domains and eigenvalue problems. (Japanese) (Not in MR)
- Sunada, Toshikazu Trace formula and spectrum of the Laplacian. (Japanese) (Not in MR)

## secondary classifications (35Pxx)

- Boutet de Monvel, L. (with Guillemin, V.) ★ The spectral theory of Toeplitz operators. **85j:58141**
- Guillemin, V. See Boutet de Monvel, L., **85j:58141**
- Kopilevich, Yu. I. See Zil'berglit, A. S., **85i:78025**
- Zil'berglit, A. S. (with Kopilevich, Yu. I.) ★ Спектральная теория регулярных волноводов. (Russian) [The spectral theory of regular waveguides] **85i:78025**

**35P05 General spectral theory**

- Arai, Masaharu (with Yamada, Osanobu) Essential selfadjointness and invariance of the essential spectrum for Dirac operators. **85a:35064**
- On essential selfadjointness, distinguished selfadjoint extension and essential spectrum of Dirac operators with matrix valued potentials. **85i:35106**
- Ben-Artzi, Matania Resolvent estimates for a certain class of Schrödinger operators with exploding potentials. **85k:35161**
- van den Berg, M. On the spectrum of the Dirichlet Laplacian for horn-shaped regions in  $\mathbb{R}^n$  with infinite volume. **85h:35155**
- de Bivar-Weinholtz, Antonio (with Piraux, Rémi) Formule de Trotter pour l'opérateur  $-\Delta + q^+ - q^- + iq'$ . (English summary) [Trotter formula for the operator  $-\Delta + q^+ - q^- + iq'$ ] **85g:35085**
- Burnat, M. The spectral properties of the Schrödinger operator in nonseparable Hilbert spaces. **85i:35107a**
- The spectral cutting problem. **85i:35107b**
- Cycon, Hans L. Absence of singular continuous spectrum for two-body Schrödinger operators with long-range potentials (a new proof). **85d:35081**
- Devnats, Allen (with Rejto, P. A.) A limiting absorption principle for Schrödinger operators with oscillating potentials. I.  $-\Delta + c \sin(b |x|^{\alpha}) / |x|^{\beta}$  for certain  $c, \alpha, \beta$ . **85f:35154a**
- (with Rejto, P. A.) A limiting absorption principle for Schrödinger operators with oscillating potentials. II.  $-\Delta + c \sin(b |x|) / |x| + V(x)$  for short range  $V$  and small coupling constant  $c$ . **85f:35154b**
- Edmunds, D. E. (with Evans, W. D.; Fleckinger, J.) On the spectrum and the distribution of singular values of Schrödinger operators with a complex potential. **85k:35162**

- Evans, W. D. See Edmunds, D. E.; et al., 85k:35163
- Fleckinger, J. See Edmunds, D. E.; et al., 85k:35162
- Froese, Richard (with Herbst, Ira; Hoffmann-Ostenhof, Maria; Hoffmann-Ostenhof, Thomas) On the absence of positive eigenvalues for one-body Schrödinger operators. 85b:35038
- Giarding, Lars On the essential spectrum of Schrödinger operators. 85c:35087
- Gurarie, David (with Kon, Mark A.) Summability and bounds for multipliers of elliptic operators on  $\mathbb{R}^n$ . 85d:35082
- Helfer, B. (with Robert, Didier) Comportement semi-classique du spectre des hamiltoniens quantiques hypoelliptiques. [Semiclassical behavior of the spectrum of hypoelliptic quantum Hamiltonians] 85a:35065
- Hempel, Rainer Periodic Schrödinger operators with (nonperiodic) magnetic and electric potentials. 85k:35163
- Herbst, Ira See Froese, Richard; et al., 85b:35038
- Hoffmann-Ostenhof, Maria See Froese, Richard; et al., 85b:35038
- Hoffmann-Ostenhof, Thomas See Froese, Richard; et al., 85b:35038
- Iosif'yan, G. A. (with Oleinik, O. A.; Shamaev, A. S.) Averaging of eigenvalues of a boundary value problem of elasticity theory with rapidly oscillating periodic coefficients. (Russian) 85j:35134
- Jäger, Willi (with Rejto, P. A.) Limiting absorption principle for some Schrödinger operators with exploding potentials. I. 85d:35083a
- (with Rejto, P. A.) Limiting absorption principle for some Schrödinger operators with exploding potentials. II. 85d:35083b
- Jaiswal, M. P. See Tiwari, S., 85b:35039
- Kon, Mark A. See Gurarie, David, 85d:35082
- Lavrenko, M. V. Criterion for discreteness of the spectrum for quasi-elliptic operators. (Russian) (See 85k:35001)
- Lundina, D. Sh. The kernel of the resolvent of a three-dimensional Schrödinger operator. (Russian) 85k:35164
- Migliacelo, Lucia A discreteness result for the spectrum of a class of elliptic operators. (Italian. English summary) 85k:35165
- Murata, Minoru High energy resolvent estimates. I. First order operators. 85h:35156a
- High energy resolvent estimates. II. Higher order elliptic operators. 85h:35156b
- Nardini, Franco Singular nonpolynomial perturbations of  $-\Delta + |x|^2$ . (Italian summary) 85d:35084
- Oleinik, O. A. See Iosif'yan, G. A.; et al., 85j:35134
- Perry, Peter A. Exponential bounds and semifiniteness of point spectrum for  $N$ -body Schrödinger operators. 85k:35166
- Piroux, Rémi See de Bivar-Weinholts, Antonio, 85g:35088
- Rejto, P. A. See Jäger, Willi, 85d:35083a and 85d:35083b; Devinatz, Allen, 85f:35154a and 85f:35154b
- Robert, Didier See Helfer, B., 85a:35065
- Shamaev, A. S. See Iosif'yan, G. A.; et al., 85j:35134
- Simon, Barry Instantons, double wells and large deviations. 85d:35085
- Tiwari, S. (with Jaiswal, M. P.) On the discreteness of the spectrum associated with a matrix partial differential operator. 85b:35039
- Udim, Tiban Bemerkungen über die wesentliche Selbstadjungiertheit von Schrödinger-Operatoren. [Remarks on the essential selfadjointness of Schrödinger operators] 85g:35089
- Yakubov, V. Ya. Estimates for elliptic operator eigenfunctions normalized in  $L_2$ . (Russian) 85j:35135
- Yamada, Osanobu See Arai, Masaharu, 85a:35064
- secondary classifications (35P05)
- Avron, Joseph (with Simon, Barry) Almost periodic Schrödinger operators. II. The integrated density of states. 85i:34009a
- Berezin, F. A. (with Shubin, M. A.) ★ Уравнение Шрёдингера. (Russian) [The Schrödinger equation] 85m:81001
- Berger, Marc Aron (with Sloan, Alan D.) Product formulas for semigroups with elliptic generators. 85j:35086
- Bets, C. (with Gzyl, H.) ★ Probabilistic approach for comparing first eigenvalues. 85c:60117
- Brüning, Jochen On the compactness of isospectral potentials. 85h:58170
- Carroll, Robert Wayne On the canonical development of Parseval formulas for singular differential operators. (Italian summary) 85i:35030
- Charbonnel, Anne-Marie Spectre conjoint d'opérateurs pseudodifférentiels qui commutent. (English summary) [Joint spectrum of pseudodifferential operators that commute] 85i:47050
- Corones, James (with Krueger, Robert) Obtaining scattering kernels using invariant imbedding. 85k:35126
- Deift, P. (with Simon, Barry) Almost periodic Schrödinger operators. III. The absolutely continuous spectrum in one dimension. 85i:34009b
- Gesztesy, F. (with Pittner, L.) A generalization of the virial theorem for strongly singular potentials. 85e:81022
- Gzyl, H. See Bets, C., 85c:60117
- Helfer, B. (with Robert, Didier) Calcul fonctionnel par la transformation de Mellin et opérateurs admissibles. (English summary) [Functional calculus by the Mellin transform and admissible operators] 85i:47052
- Hempel, Rainer Perturbations by quadratic forms and invariance of essential spectra. 85d:47015
- Kal'menov, T. Sh. The spectrum of a selfadjoint problem for the wave equation. (Russian) 85j:35109
- Karpeshina, Yu. E. The spectrum and eigenfunctions of the Schrödinger operator in a three-dimensional space with point-like potential of the homogeneous two-dimensional lattice type. (Russian. English summary) 85f:81011
- Kauffman, Robert M. The Weyl theory for a class of elliptic boundary value problems on a half-space. 85i:35050
- Kirsch, W. (with Martinelli, Fabio) Some results on the spectra of random Schrödinger operators and their application to random point interaction models in one and three dimensions. 85i:81026
- Kogan, Yu. V. Eigenfunctions of an operator corresponding to poles of analytic continuation of the resolvent across the continuous spectrum. (Russian) 85j:47051
- Kopachevskii, N. D. (with Temnov, A. N.) Free oscillations of an ideal stratified fluid in a vessel. (Russian) 85d:76027
- Koslov, S. M. Ground states of quasiperiodic operators. (Russian) 85d:35027
- (with Shubin, M. A.) Coincidence of spectra of random elliptic operators. (Russian) 85i:35149
- Krueger, Robert See Corones, James, 85k:35126
- Kürsten, K.-D. Über das Spektrum von Schrödinger-Operatoren mit formsbeschränktem Potential. (English summary) [On the spectrum of Schrödinger operators with form-bounded potential] 85m:81034
- Kuttler, J. R. (with Sigillito, V. G.) Eigenvalues of the Laplacian in two dimensions. 85k:65086
- Martinelli, Fabio See Kirsch, W., 85i:81026
- Marvis, Shabla (with Melrose, Richard) Spectral invariants of convex planar regions. 85d:58064
- Melrose, Richard See Marvis, Shabla, 85d:58064
- Mishchenko, A. S. (with Sharipov, F.) Independence of the spectrum of an elliptic operator with random coefficients. (Russian) 85h:35230
- Mokhtar-Kharroubi, Mustapha Existence, majoration, stabilité et invariance du spectre de l'opérateur de transport. (English summary) [Existence, nonexistence, bounds, stability and invariance of the spectrum of the transport operator] 85c:45018a
- Théorie spectrale de l'opérateur de transport dans le cas anisotrope dégénéré. (English summary) [Spectral theory for the transport operator: the degenerate anisotropic case] 85c:45018b
- Nardini, Franco Spectral analysis of a pseudodifferential operator related to the relativistic Stark effect. (Italian summary) 85g:81029
- Nguyễn, Đình Xuân Essential selfadjointness and selfadjointness for generalized Schrödinger operators. 85g:35039
- Essential selfadjointness and selfadjointness for even order elliptic operators. 85b:35012
- Pittner, L. See Gesztesy, F., 85e:81022
- Protter, M. H. The maximum principle and eigenvalue problems. 85d:35017
- Robert, Didier See Helfer, B., 85i:47052
- Sharipov, F. See Mishchenko, A. S., 85h:35230
- Shubin, M. A. See Koslov, S. M., 85i:35149 and Berezin, F. A., 85m:81001
- Sledentop, Heino K. H. On bracketing of energy eigenvalues of multiparticle systems. 85h:81072a
- Bound on resonance eigenvalues of Schrödinger operators. 85h:81072b
- Sigillito, V. G. See Kuttler, J. R., 85k:65086
- Simon, Barry See Avron, Joseph, 85i:34009a and Deift, P., 85i:34009b
- Sloan, Alan D. See Berger, Marc Aron, 85j:35086
- Tamura, Hideo The principle of limiting absorption and decay of local energy for the linearized equation of magnetohydrodynamics. 85b:35031
- Temnov, A. N. See Kopachevskii, N. D., 85d:76027
- Vugal'ter, S. A. (with Zhislín, G. M.) The discrete spectrum of the energy operator of one-dimensional and two-dimensional quantum three-particle systems. (Russian. English summary) 85h:81017
- (with Zhislín, G. M.) On the finiteness of discrete spectrum in the  $n$ -particle problem. 85m:81036
- Wilcox, Calvin H. ★ Sound propagation in stratified fluids. 85i:76040
- Zhislín, G. M. See Vugal'ter, S. A., 85h:81017 and 85m:81036
- 35P10 Completeness of eigenfunctions, eigenfunction expansions
- Allimov, Sh. A. (with Joó, István) On the eigenfunction expansions associated with the Schrödinger operator having spherically symmetrical potential. 85i:35108a
- (with Joó, István) On the Riesz summability of eigenfunction expansions. 85i:35108b
- Ashurov, R. R. Conditions for localization of spectral decompositions corresponding to elliptic operators with constant coefficients. 85c:35063
- Bastis, A. I. Divergence of expansions in eigenfunctions. (Russian) 85i:35109
- Convergence almost everywhere of spectral expansions of functions from  $L^p_\omega$ . (Russian) 85i:35110
- Chulko, G. I. Expansion in eigenelements of a nonselfadjoint operator. (Ukrainian. Russian summary) 85g:35090
- Durdyev, N. T. (with Orazov, M. B.) Completeness of the root functions in some eigenvalue problems for fourth-order equations of mixed type. (Russian) 85k:35167
- Gurarie, David (with Kon, Mark A.) Radial bounds for perturbations of elliptic operators. 85h:35157
- Isozaki, Hiroshi On the generalized Fourier transforms associated with Schrödinger operators with long-range perturbations. 85d:35086
- Joó, István (with Komornik, V.) On the equivalence of expansions by Riesz bases formed by eigenfunctions of the Schrödinger operator. 85f:35155
- See also Allimov, Sh. A., 85i:35108a and 85i:35108b
- Karpeshina, Yu. E. An eigenfunction expansion theorem for the problem of scattering on homogeneous periodic supports of chain type in three-dimensional space. (Russian) 85b:35040
- An eigenfunction expansion theorem for the Schrödinger operator with a homogeneous simple two-dimensional lattice of potentials of zero radius in a three-dimensional space. (Russian. English summary) 85h:35158
- Komornik, V. See Joó, István, 85f:35155
- Kon, Mark A. See Gurarie, David, 85h:35157
- Kozlova, N. N. Riesz summability of continuous functions in Nikol'skii classes. (Russian) 85k:35168



- Leipholz, H. H. E. Extension of Hilbert-Schmidt's theorem to a certain class of problems with unsymmetric kernels. **85h:35159**
- Makhs, A. S. Summation by the Abel-Poisson method of spectral expansions corresponding to elliptic and ordinary differential operators. (Russian) **85c:35088**
- Mikhailova, V. A. Completeness of eigenfunctions of general elliptic operators. (Russian) (See **85k:35001**)
- Oranov, M. B. See Durdjev, N. T., **85k:35167**
- Popov, Georgi St. (with Shubin, M. A.) Asymptotic expansion of the spectral function for second-order elliptic operators in  $\mathbb{R}^n$ . (Russian) **85b:35041**
- Röhm, R. Solution of the eigenvalue problem of the Laplace operator in a space of functions solenoidal in a two-dimensional rectangular domain and homogeneous on part of the boundary. (Russian. English and Estonian summaries) **85f:35156**
- Rynne, B. P. (with Sleeman, B. D.) Bloch waves and multiparameter spectral theory. **85h:35160**
- Serov, V. S. Absolute divergence of series in eigenfunctions of the Laplace operator in the class  $C^{m/2}$ . (Russian) **85a:35066**
- Shubin, M. A. See Popov, Georgi St., **85b:35041**
- Sleeman, B. D. See Rynne, B. P., **85h:35160**
- Sosonov, V. G. Uniform convergence of spectral expansions of functions in  $H^s_{(p_1, p_2)}$ . (Russian) **85f:35157**

## secondary classifications (35P10)

- Dolgopletov, V. G. The basis property of the root vectors of weakly perturbed operators. (Russian) **85c:47014**
- Kasach, G. S. \* О сходимости разложения функций непрерывного спектра по системе резонансных функций. (Russian) [The convergence of expansions of functions of a continuous spectrum in a system of resonance functions] **85i:35026**
- Kostyuchenko, A. G. (with Shkalikov, A. A.) Selfadjoint quadratic operator pencils and elliptic problems. (Russian) **85c:47015**
- (with Shkalikov, A. A.) On the theory of selfadjoint quadratic operator pencils. (Russian) **85c:47017**
- Lasieć, Nobeja Convergence of spectral expansions of functions of the class  $H^s_0$ , corresponding to nonnegative selfadjoint extensions of the Sturm-Liouville operator. (Russian) **85m:34043**
- Shkalikov, A. A. See Kostyuchenko, A. G., **85c:47015** and **85c:47017**
- Singh, Sarva Jit A note on the expansion of cylindrical eigenvectors in terms of spherical eigenvectors. **85d:73008**
- Sviridov, V. V. On the completeness of quasiergetic states. (Russian) **85i:35040**
- Vagabov, A. I. A problem of vibration of a finite string. (Russian) **85k:35130**
- Wilcox, Calvin H. \* Scattering theory for diffraction gratings. **85f:78020**

## 35P15 Estimation of eigenvalues, upper and lower bounds

- Betz, C. (with Cámara-García, G. A.; Gayl, H.) Bounds for the first eigenvalue of a spherical cap. **85h:35161**
- Cámara-García, G. A. See Betz, C.; et al., **85h:35161**
- Chiti, Giuseppe A bound for the ratio of the first two eigenvalues of a membrane. **85f:35158**
- Proese, Richard (with Herbst, Ira) Exponential bounds and absence of positive eigenvalues for  $N$ -body Schrödinger operators. **85g:35091**
- Gomes, Jean-Pierre (with Lami Douo, Enrique) On an estimate for the principal eigenvalue of a linear elliptic problem. **85i:35169**
- Gayl, H. See Betz, C.; et al., **85h:35161**
- Harrell, Evans M., II Hamiltonian operators with maximal eigenvalues. **85e:35069**
- Herbst, Ira See Proese, Richard, **85g:35091**
- Hile, G. N. (with Yeh, R. Z.) Inequalities for eigenvalues of the biharmonic operator. **85k:35170**
- Joó, István (with Stachó, L. L.) Generalization of an inequality of G. Pólya concerning the eigenfrequencies of vibrating bodies. **85f:35159**
- Lami Douo, Enrique See Gomes, Jean-Pierre, **85i:35169**
- Lieb, Elliott H. On the lowest eigenvalue of the Laplacian for the intersection of two domains. **85e:35090**
- Nussbaum, Roger D. Positive operators and elliptic eigenvalue problems. **85j:35136**
- Shimamura, N. La première valeur propre du laplacien pour le problème de Dirichlet. [The first eigenvalue of the Laplacian for the Dirichlet problem] **85e:35091**
- Stachó, L. L. See Joó, István, **85f:35159**
- Urakawa, Hajime Lower bounds for the eigenvalues of the fixed vibrating membrane problems. **85m:35045**
- Yakovlev, N. N. Asymptotic estimates of densities of lattice  $k$ -packings and  $k$ -coverings, and the spectrum structure of the Schrödinger operator with periodic potential. (Russian) **85j:35137**
- Yeh, R. Z. See Hile, G. N., **85k:35170**

## secondary classifications (35P15)

- Blinov, S. P. Optimization of the first eigenvalue of a fourth-order elliptic operator. (Russian) **85j:49031**
- Davies, E. B. Double well Hamiltonians. **85i:47039**
- Kasue, Atsushi On a lower bound for the first eigenvalue of the Laplace operator on a Riemannian manifold. **85i:58120**
- Mascolo, Elvira (with Migliaccio, Lucia; Schianchi, Rosanna) An inequality for  $L^\infty$ -norm of eigenfunctions of linear second order elliptic operators. **85d:35030**
- Migliaccio, Lucia See Mascolo, Elvira; et al., **85d:35030**
- Muto, Hideo (with Ohnita, Yoshihiro; Urakawa, Hajime) Homogeneous minimal hypersurfaces in the unit spheres and the first eigenvalues of their Laplacian. **85j:53061**
- Ohnita, Yoshihiro See Muto, Hideo; et al., **85j:53061**
- Pielichowski, Wacław Some spectral properties of the product of linear nonselfadjoint operators. (Russian and Polish summaries) **85h:35075**

- Rektorys, Karel A proof of monotony of the Temple quotients in eigenvalue problems. (Russian and Czech summaries) **85m:85114**
- Schianchi, Rosanna See Mascolo, Elvira; et al., **85d:35030**
- Urakawa, Hajime See Muto, Hideo; et al., **85j:53061**
- Wong, M. W. On an abstract differential equation and its application to positive eigenvalues of Schrödinger operators. **85m:34096**

## 35P20 Asymptotic distribution of eigenvalues and eigenfunctions

- Andreev, Andrei Sergeevich Asymptotic behavior of the spectrum of the Dirichlet problem for differential operators with constant coefficients. (Russian) **85g:35092**
- Cao, Ce Wen On the asymptotic trace of the second order selfadjoint elliptic operator. **85g:35093**
- The trace of the spherical Schrödinger operator. (Chinese. English summary) **85f:35160**
- Fleckinger, J. On the singular values of nonselfadjoint operators of Schrödinger type. **85c:35064**
- Perturbation of the eigenvalues of operators of Schrödinger type. **85e:35092**
- Ivrii, V. Ya. On precise asymptotics of the eigenvalues for two classes of differential operators in  $\mathbb{R}^d$ . (Russian) **85k:35171**
- Jensen, Arne Spectral properties of Schrödinger operators and time-decay of the wave functions. Results in  $L^2(\mathbb{R}^d)$ . **85j:35138**
- Koshenkov, A. N. The remainder in the asymptotics of the spectrum of the Stokes problem. (Russian) **85k:35172**
- Kozlov, S. M. Multidimensional spectral asymptotics for elliptic operators in a bounded domain. (Russian) **85i:35111**
- Kozlov, V. A. Remainder estimates in formulas for the asymptotic behavior of the spectrum for linear operator pencils. (Russian) **85a:35087**
- Kydyraliev, S. K. Asymptotic behavior of the spectrum of variational problems with a degenerate elliptic constraint. (Russian. English summary) **85h:35162**
- Lapins, Michel L. Valeurs propres du laplacien avec un poids qui change de signe. (English summary) [Eigenvalues of the Laplacian with an indefinite weight function] **85j:35139**
- Levendorskii, S. Z. The approximate spectral projector method as a general method of justifying the classical formula of spectral asymptotics. (Russian) **85j:35140**
- Distribution of eigenvalues of systems of the form  $Au = tBu$ . (Russian) **85d:35087**
- Lifshitz, A. E. Weakly coupled systems with nonpropagating waves. (Russian) **85g:35094**
- Makhmudov, M. D. The asymptotic behavior of eigenvalues and eigenfunctions of a second-order nonselfadjoint elliptic operator with constant coefficients in thin cylinders. (Russian. English and Azerbaijani summaries) **85c:35065**
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- Robert, Didier Remarks on a paper: "Szego limit theorems in quantum mechanics" [J. Funct. Anal. **50** (1983), no. 1, 67-80; MR **84c:35124**] by S. Zelditch. **85k:35187**
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- Avron, Joseph (with Herbst, Ira; Simon, Barry) Schrödinger operators with magnetic fields. III. Atoms in homogeneous magnetic field. **85h:81084**
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- Kawashima, Shuichi See Okada, Mari. **85c:76050**
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- (with Specovius, M.; Varnhorn, W.) Über die Hölderstetigkeit der direkten Werte der Tangentialableitungen Stokescher Einfachschichtpotentiale. [On the Hölder continuity of the direct values of tangential derivatives of Stokes' single layer potentials] 85j:35159
- Heywood, John G. Stability, regularity and numerical analysis of the nonstationary Navier-Stokes problem. 85f:35166
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- McKean, H. P. Stabilization of solutions of a caricature of the FitzHugh-Nagumo equation. **85d:35102a**
- Stabilization of solutions of a caricature of the FitzHugh-Nagumo equation. II. **85d:35102b**
- Nakhushev, A. M. Loaded equations and their applications. (Russian) **85b:35064**
- Pao, C. V. See Bao Ping, Liu, **85c:35119**

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- Akhishev, A. Sh. A problem of V. S. Vladimirov in the theory of radiation transport. (Russian. English and Czech summaries) **85b:85064**
- Bell, Jonathan (with Comer, C.) Threshold conditions for a diffusive model of a myelinated axon. **85k:92019**
- Belov, V. Ya. (with Kapitonov, B. V.) A hydrodynamic model of a chemically active fluid. (Russian) **85f:80026**
- Bona, J. L. (with Bona, D. K.; Turner, R. E. L.) Finite-amplitude steady waves in stratified fluids. **85e:76056**
- Bona, D. K. See Bona, J. L.; et al., **85e:76056**
- Comincioli, Valeriano (with Torelli, Alessandro) Mathematical aspects of the cross-bridge mechanism in muscle contraction. **85g:92007**
- Comer, C. See Bell, Jonathan, **85k:92019**
- Darling, Byron T. A vector wave identity and its application to the electromagnetic field. **85b:78011**
- Demlov, M. Yu. Linearization of an age model of a population. (Russian) **85m:92005**
- El Mabrouk, Monji (with Zeytoonian, Radyadour Kh.) Sur les conditions au bord pour les équations primitives. [Boundary conditions for primitive equations] **85c:86006**
- Eremín, M. S. Transformation operators in a bicylinder of solutions of certain integro-differential equations. (Russian) **85b:45021**
- Fushchich, V. I. Symmetry and particular solutions of certain multidimensional equations of mathematical physics. (Russian. English summary) **85m:58188**
- Gawinecki, Jerzy Existence and uniqueness of the solution of the third boundary-initial value problem for thermal stresses equations of classical and generalized thermomechanics. (Russian summary) **85b:73046**
- Giles, Michael B. (with Rose, Milton E.) A numerical study of the steady scalar convective diffusion equation for small viscosity. **85m:85103**
- Gurtin, M. E. (with Pipkin, A. C.) A note on interacting populations that disperse to avoid crowding. **85b:92006**
- Hsu, See Bi Steady states of a system of partial differential equations modeling microbial ecology. **85a:92037**
- Inoue, Nobuyuki See Yoshida, Zensho; et al., **85j:76048**
- Kaper, H. G. (with Lekkerkerker, C. G.; Zettl, A.) Linear transport theory and an indefinite Sturm-Liouville problem. **85b:82088**
- Kapitonov, B. V. See Belov, V. Ya., **85f:80026**
- Lekkerkerker, C. G. See Kaper, H. G.; et al., **85b:82088**
- Lyashenko, A. A. Not almost periodic solutions of S. L. Sobolev's equation. (Russian) **85m:35009**
- Perelló, Carlos A problem for mathematics: how a medium loses its uniformity. (Catalan) (See **85b:80011b**)
- Pileckas, Konstantinas Spaces of solenoidal vectors. (Russian) **85i:46039**
- Pipkin, A. C. See Gurtin, M. E., **85b:92006**
- Piassi, Piero Existence of partially "analytic" distributional solutions to degenerate Cauchy problems for Kolmogorov-type equations. (Italian summary) **85j:35039**
- Pommaret, J.-F. ★ Differential Galois theory. **85m:12004**
- Rose, Milton E. See Giles, Michael B., **85m:85103**
- Romo, Fabio Variational methods for pointwise stability of viscous fluid motions. **85m:76031**
- Schatzman, M. Spatial structuring in a model in neurophysiology. (French summary) **85h:92014**
- Shen, Wei Xi See Zheng, Song Mu, (Not in MR)
- Tarapov, I. E. Integrals of the equations of motion of a magnetizable ideal medium. **85m:76081**
- Torelli, Alessandro See Comincioli, Valeriano, **85g:92007**
- Turner, R. E. L. See Bona, J. L.; et al., **85e:76056**
- Uchida, Taijiro See Yoshida, Zensho; et al., **85j:76048**
- Wang, Kang Ning Parameter identification problem for a class of distributed parameter systems. **85m:76064**
- Yoshida, Zensho (with Uchida, Taijiro; Inoue, Nobuyuki) Time-asymptotic behavior of incompressible plasmas. **85j:76048**
- Young, David P. Singular nonlinear diffusion equations. **85g:35069**
- Zemkovich, N. A. Differential games with distributed parameters. (Russian) **85j:90081**
- Zettl, A. See Kaper, H. G.; et al., **85b:82088**
- Zeytoonian, Radyadour Kh. See El Mabrouk, Monji, **85c:86006**
- Zhdanova, G. V. Scattering of plane elastic waves by a slender body with a free boundary. (Russian) **85c:73015**
- Zheng, Song Mu (with Shen, Wei Xi) Global existence for initial-boundary value problems of systems of FitzHugh-Nagumo equations. (Chinese) (Not in MR)

**35Rxx Miscellaneous topics** (For equations on manifolds, see **58Gxx**; for manifolds of solutions, see **58Bxx**; for stochastic PDEs, see also **60H15**.)

**35R05 Equations with discontinuous coefficients or data**

## secondary classifications (35R05)

- Costabel, Martin (with Stephan, E.) Curvature terms in the asymptotic expansions for solutions of boundary integral equations on curved polygons. **85f:35040**
- Franciosi, Michelangelo On an elliptic-parabolic equation with discontinuous coefficients. (Italian. English summary) **85c:35033**
- Primicerio, M. Mushy regions in phase-change problems. **85f:35199**
- Rossmann, Jürgen Das Dirichletproblem für stark elliptische Differentialgleichungen, bei denen die rechte Seite  $f$  zum Raum  $W^{-k}(G)$  gehört, in Gebieten mit konischen Ecken. [The Dirichlet problem for strongly elliptic differential equations whose right-hand side  $f$  belongs to the space  $W^{-k}(G)$ , in domains with conical corners] **85f:35075**
- Stephan, E. See Costabel, Martin, **85f:35040**

**35R10 Difference-partial differential equations, equations with time lag**

- Bebernes, J. (with Ely, Richard Wayne) Existence and invariance for parabolic functional equations. **85i:35137**
- Ely, Richard Wayne See Bebernes, J., **85i:35137**
- Kamont, Z. On the Cauchy problem for differential-functional equations with first order partial derivatives. (See **85d:34002**)
- Kishimoto, Kazuo See Yoshida, Kiyoshi, **85j:35186**
- Liu, Bao Ping Periodic solutions of partial differential equations with deviating arguments. (Chinese. English summary) **85d:35103**
- Rabinovich, V. S. The Cauchy problem for parabolic differential-difference operators with variable coefficients. (Russian) **85c:35121**
- Sekhasheva, A. Linear partial differential equations with lag. (Russian) **85c:35122**
- Skubachevskii, A. L. Strongly elliptic systems of differential equations with deviating argument. (Russian) (See **85g:34003**)
- Straburski, Jan Existence of solutions of the Goursat problem for some functional-differential equations. **85k:35220**
- Toda, Morikazu Nonlinear lattice and a nonlinear difference-differential equation. **85a:35087**
- Yoshida, Kiyoshi (with Kishimoto, Kazuo) Effect of two time delays on partially functional-differential equations. **85j:35186**

## secondary classifications (35R10)

- Arai, Asao On the existence of solution to Schwinger's functional differential equations of higher order. **85d:81087**
- Bebernes, J. (with Ely, Richard Wayne) Comparison techniques and the method of lines for a parabolic functional equation. **85d:45020**
- Brodimas, G. N. See Jannussis, A. D.; et al., **85k:81089**
- Bykov, Ya. V. Oscillation of solutions of first-order functional-integro-differential equations of Barbasin type. (Russian) **85d:45014**
- Ely, Richard Wayne See Bebernes, J., **85d:45020**
- Eremín, M. S. Transformation operators in a bicylinder of solutions of certain integro-differential equations. (Russian) **85b:45021**
- Gasanov, K. K. A strengthened condition for optimality of singular controls in a system with distributed parameters and with retarded argument. (Russian. English and Azerbaijani summaries) **85f:49036**
- Jannussis, A. D. (with Brodimas, G. N.; Papatheou, V.; Leodaris, A.) The Caldirola-Montaldi procedure and the  $Q$ -analysis are noncanonical theories in time. **85k:81089**
- Leodaris, A. See Jannussis, A. D.; et al., **85k:81089**
- Mahato, G. See Roy Chowdhury, A., **85c:35083**
- Malec, Marian (with Rosati, Mario Valerio) Weak monotonicity for nonlinear systems of functional-finite difference inequalities of parabolic type. (Italian summary) **85g:35124**
- Markowich, Peter A. Difference methods for parabolic history value problems. **85k:65073**
- Papatheou, V. See Jannussis, A. D.; et al., **85k:81089**
- Rabinovich, V. S. Algebras of pseudodifferential operators connected with differential-difference operators. I. (Russian) **85e:47072**
- Real Anguas, José Some questions of stability for stochastic partial differential equations with delay. (Spanish) **85j:60112**
- Rosati, Mario Valerio Some results concerning weak monotonicity for nonlinear systems of functional-finite difference inequalities of parabolic type. (Italian summary) **85c:35116**
- See also Malec, Marian, **85g:35124**
- Roy Chowdhury, A. (with Mahato, G.) A Darboux-Bäcklund transformation associated with a discrete nonlinear Schrödinger equation. **85c:35083**
- Sinestrari, Eugenio A noncompact differentiable semigroup arising from an abstract delay equation. **85f:47046**
- Skubachevskii, A. L. Smoothness of solutions of the first boundary value problem for an elliptic differential-difference equation. (Russian) **85d:35018**
- Šlodicka, Marian Parabolic partial differential equations with memory. (Russian summary) **85h:45024**
- Tramov, M. I. Oscillation of solutions of partial differential equations with deviating argument. (Russian) **85h:35023**
- Visintin, Augusto A phase transition problem with delay. (Russian and Polish summaries) **85b:35069**
- Zhitomirskii, Ya. I. The Cauchy problem for systems of parabolic equations with deviating argument. (Russian) **85g:35065**

**35R15 Equations on function spaces** [See also **58D25**.]

- Dyachkin, O. D. Solution by the parametrix method of parabolic equations with respect to measures and functions on a Hilbert space. (Russian) **85k:35221**
- Frolov, N. N. Differential inequalities for functions of an infinite-dimensional argument. (Russian) **85g:35115**
- Smoothness of the generalized solution of the Dirichlet problem for an infinite-dimensional differential operator. (Russian) **85j:35187**

- Iosipchuk, N. D. Solution of a homogeneous first-order linear equation in functional derivatives. (Russian) (See 85k:35001)
- Khrennikov, A. Yu. The Dirichlet problem in a Banach space. (Russian) 85g:35116
- An existence theorem for the solution of the infinite-dimensional Schrödinger equation with quadratic potential. (Russian) 85j:35188
- Samolienko, Yu. S. (with Us, G. F.) Differential operators with constant coefficients on functions of a countable number of variables. (Russian) 85k:35222
- Shakhbazyan, R. L. A general boundary value problem for higher-order equations of elliptic type with an infinite number of independent variables. (Russian. English and Armenian summaries) 85f:35192
- Us, G. F. See Samolienko, Yu. S. 85k:35222

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- Acquistapace, Paolo (with Terreni, Brunello) An approach to Ito linear equations in Hilbert spaces by approximation of white noise with coloured noise. 85k:60083
- Berezanskii, Yu. M. Selfadjointness of infinite-dimensional elliptic differential operators with singular potential. (Russian) 85e:47069
- (with Samolienko, V. Gr.) Selfadjointness of infinite-dimensional elliptic differential operators. (Russian) 85f:47042
- (Chulaevskii, V. A.) See Glimm, James. 85g:81001
- El-Saify, H. A. On optimal control for the hyperbolic operator with an infinite number of variables. 85d:49005
- Funaki, Tadahisa Random motion of strings and related stochastic evolution equations. 85g:60063
- Glimm, James (with Jaffe, Arthur) ★ Математические методы квантовой физики. (Russian) [Mathematical methods of quantum physics] 85g:81001
- (Gusev, E. V.) See Glimm, James. 85g:81001
- Ilyasova, D. Z. See Vernik, A. N. 85g:47057
- Jaffe, Arthur See Glimm, James. 85g:81001
- (Khanin, K. M.) See Glimm, James. 85g:81001
- (Minlos, R. A.) See Glimm, James. 85g:81001
- Norin, N. V. Heat potentials on a Hilbert space. (Russian) 85i:46059
- Real Anguas, José Some questions of stability for stochastic partial differential equations with delay. (Spanish) 85j:60112
- Samolienko, V. Gr. See Berezanskii, Yu. M. 85f:47042
- Terreni, Brunello See Acquistapace, Paolo. 85k:60083
- Vernik, A. N. (with Ilyasova, D. Z.) Generalized resolvents of an infinite-dimensional analogue of a second-order differential operator. (Russian) 85g:47067

#### 35R20 Operator equations, general [See also 34Gxx, 47A50, 47H15.]

- Dubois, R.-M. Opérateurs locaux localement dissipatifs à valeurs dans un espace de Hilbert. [Locally dissipative local operators with values in a Hilbert space] 85f:35193
- Problèmes mixtes abstraits et principe du maximum parabolique. [Abstract mixed problems and parabolic maximum principle] 85f:35194
- Salvitti, Reinaldo Solutions of a Cauchy-Goursat problem. 85g:35117
- Shakhmurov, V. B. Fredholmity of general boundary value problems for elliptic equations with nonselfadjoint operator coefficients. (Russian. English and Azerbaijani summaries) 85h:35218
- Fredholm property of boundary value problems for quasielliptic equations with operator coefficients depending on variables. (Russian. English and Azerbaijani summaries) 85k:35223
- Ugowski, Henryk An application of Bernstein polynomials in solving the first Fourier problem for parabolic equations in a Banach space. 85h:35219

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- Favini, Angelo A note on singular and degenerate abstract equations. (Italian summary) 85e:47016
- Graff, Richard A. The existence of local semiflows for nonlinear differential equations in Banach spaces, and applications to partial differential equations. 85a:34086
- Khazan, M. I. See Krein, S. G. 85f:34116
- Kopilevich, Yu. I. See Zil'bergel't, A. S. 85i:78025
- Kos'mina, E. S. Solvability of the Cauchy problem for an almost linear hyperbolic equation with functional and algebraic nonlinearities. (Russian. English summary) 85h:34076
- Approximation of the solution of a nonlinear hyperbolic equation with a functional coefficient by means of solutions of an almost linear hyperbolic equation. (Russian) 85f:35142
- Krein, S. G. (with Khazan, M. I.) Differential equations in a Banach space. (Russian) 85f:34116
- Paquet, Luc Opérateurs elliptiques sur les variétés non compactes. (English summary) [Elliptic operators on noncompact manifolds] 85h:58120
- Radyno, Ya. V. ★ Линейные уравнения и биология. (Russian) [Linear equations and biology] 85d:46006
- Shishataki, S. P. ★ Проблема единственности решения задач Коши для вырождающихся уравнений. (Russian) [The problem of the uniqueness of solutions of Cauchy problems for degenerate equations] 85h:35002
- Wang, Ji Yan (with Zhang, Lu Ping) The  $H_X$  solutions of a class of Fuchs type partial differential equations with differential operator coefficients. (Chinese) 85m:35010
- Weyer, Jürgen Regular solutions of wave equations containing nonlinearities of the type  $L\Phi L$ . 85f:35144
- Zhang, Lu Ping See Wang, Ji Yan. 85m:35010
- Zil'bergel't, A. S. (with Kopilevich, Yu. I.) ★ Спектральная теория регулярных волноводов. (Russian) [The spectral theory of regular waveguides] 85i:78025

#### 35R25 Improperly posed problems

- Akhmedov, Z. A. See Atakhodjaev, M. A. 85e:35123
- Atakhodjaev, M. A. (with Akhmedov, Z. A.) A problem for the biharmonic equation in a rectangle. (Russian) 85e:35123

- Crooke, P. S. (with Payne, L. E.) Continuous dependence on geometry for the backward heat equation. 85j:35189
- Janovsky, Vladimir (with Marek, Ivo; Neuberg, J.) Maxwell's equations with incident waves as a field source. 85d:35104
- Kokobayev, B. K. Well-posed boundary value problems for certain differential equations. (Russian) 85k:35224
- Marek, Ivo See Janovsky, Vladimir; et al. 85d:35104
- Neuberg, J. See Janovsky, Vladimir; et al. 85d:35104
- Payne, L. E. See Crooke, P. S. 85j:35189
- Temirbulatov, S. I. A heat conduction problem in a cylindrical domain. (Russian. Kazakh summary) 85a:35088

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- Akhmedov, Z. A. A conditionally well-posed problem for a biharmonic equation in a rectangle. (Russian) (Not in MR)
- Beznochenko, N. Ya. The Cauchy problem for the equation  $u_t - \Delta u + uAu = f$ . (Russian) 85e:35061
- Existence of a solution to a boundary value problem for the equation  $u_t - Lu = uBu + f$ . (Russian) 85e:35062
- Luan, Wen Gul The stability estimates of improperly posed Cauchy problems for linear partial differential equations with constant coefficients. (Chinese. English summary) 85a:35022
- Papi Frosali, Gloria (with Pucci, Carlo) A not well posed problem for the wave equation. (Italian summary) 85k:35128
- Pucci, Carlo See Papi Frosali, Gloria. 85k:35128
- Zaitseva, O. V. The well-posedness of a model nonstrictly hyperbolic mixed problem. (Russian) 85h:35137

#### 35R30 Inverse problems (undetermined coefficients, etc.)

- Akhundov, A. Ya. An inverse problem for linear parabolic equations. (Russian. English and Azerbaijani summaries) 85i:35138
- Amirov, A. Kh. A class of multidimensional inverse problems. (Russian) 85i:35139
- Angell, T. S. (with Colton, David; Kirsch, Andreas) The three-dimensional inverse scattering problem for acoustic waves. 85a:35089
- Anger, Gottfried Inverse problems in mathematics, science and technology. Results, open problems and tendencies in the development. (German summary) 85d:35105
- Anikonov, Yu. E. (with Erokhin, G. N.) Inversion formulas in inverse problems for the wave equation. (Russian) 85j:35190
- Baev, A. V. Solution of an inverse problem for the wave equation by means of a regularizing algorithm. (Russian) 85h:35220
- Barashkov, A. S. Reconstruction of the domain of definition of the Helmholtz equation with a small parameter. (Russian) 85h:35221
- An inverse problem for the Helmholtz equation in a domain with an unknown boundary. (Russian) 85j:35191
- Belinskii, S. P. A formulation of an inverse problem for the system of Maxwell equations. (Russian) 85k:35225
- Beznochenko, N. Ya. Sufficient conditions for the existence of a solution to problems of determining the coefficients multiplying the highest derivatives of a parabolic equation. (Russian) 85k:35226
- Blagoveshchenskii, A. S. Inverse problems of the theory of wave propagation in random media. (Russian) 85m:35049
- Bochenek, Jan Global inverse problem of the Sturm-Liouville type for a linear elliptic partial differential equation of second order. 85e:35124
- Bukhgeim, A. L. (with Kardakov, V. B.) Solution of an inverse problem for an equation of elastic waves. The finite-dimensional case. (Russian) 85k:35227
- Chrasnowski, Eugeniusz M. A nonlinear inverse problem for a combined system of diffusion equations. 85i:35140
- Colton, David The inverse scattering problem for acoustic waves. 85d:35106
- (with Kirsch, Andreas) Analytic and numerical methods in the study of the inverse scattering problem for acoustic waves. 85c:35087
- See also Angell, T. S.; et al. 85a:35089
- Denisov, A. M. Some inverse problems for the heat equation. (Russian) 85j:35192
- (with Tulkina, S. R.) Approximate solution of an inverse problem of sorption dynamics. (Russian) 85i:35141
- (with Tulkina, S. R.) Some inverse problems of nonequilibrium dynamics of sorption. (Russian) 85i:35142
- Erokhin, G. N. See Anikonov, Yu. E. 85j:35190
- Gafarova, A. F. Existence and uniqueness theorems for a class of inverse problems for parabolic equations. (Russian) (See 85f:35003)
- Gaspárov, Ľ. N. An inverse problem for an equation of parabolic type. (Russian) 85k:35118
- Gol'dman, N. L. A multidimensional inverse problem for a quasilinear parabolic operator. (Russian) 85m:35050
- An approximate method of solution of a nonlinear inverse problem for a multidimensional parabolic equation. (Russian) 85m:35051
- Uniqueness of the determination of the coefficients of a quasilinear parabolic equation. (Russian) 85j:35193
- Iskenderov, A. D. Variational formulations of multidimensional inverse problems of mathematical physics. (Russian) 85h:35222
- Kabanikhin, S. I. A problem of determining the coefficients of the acoustics equation. (Russian) 85k:35228
- Kardakov, V. B. See Bukhgeim, A. L. 85k:35227
- Kazakov, A. Ya. Inverse problems of the theory of radiation transport in a ball and a cylinder. (Russian) 85h:35223
- Kirsch, Andreas See Angell, T. S.; et al. 85a:35089 and Colton, David. 85c:35087
- Klibanov, M. V. Uniqueness of solutions in "the large" of some multidimensional inverse problems. (Russian) 85m:35052

- Lavrent'ev, M. M. (with Resnitskaya, K. G.; Yakhno, V. G.) ★ Одномерные обратные задачи математической физики. (Russian) [One-dimensional inverse problems of mathematical physics] 85g:35119
- Lorenzi, Alfredo A remark on the paper: "An inverse problem for a semilinear parabolic equation" [Ann. Mat. Pura Appl. (4) 131 (1982), 145-166; MR 84c:35109]. 85h:35234
- Muskhelishvili, N. V. Uniqueness of simultaneous determination of heat conduction and heat capacity coefficients. (Russian) 85g:35120
- Orlovskii, D. G. Inverse Cauchy problem for linear hyperbolic systems. (Russian) 85j:35194
- Ratyni, A. K. Determination of the constant coefficient of the heat equation. (Russian) 85c:35125
- Resnitskaya, K. G. The source problem. The case when the highest derivative has a coefficient and there is one unknown function. (Russian) 85k:35229  
See also Lavrent'ev, M. M.; et al., 85g:35119
- Romanenko, E. V. The accuracy of reconstructing the coefficients of a hyperbolic system of equations on the whole axis from incomplete scattering data. (Russian) 85j:35195
- Romanov, V. G. Extension of data in inverse problems with concentrated sources. (Russian) 85h:35235
- Suzuki, Takashi Deformation formulas and their applications to spectral and evolutionary inverse problems. 85j:35196
- Tikhonov, N. A. An inverse problem for a nonlinear differential equation. (Russian) 85b:35085
- Tsatsko, V. A. See Zapreev, A. S., 85d:35107 and 85h:35226
- Tukina, S. R. See Denisov, A. M., 85i:35141 and 85i:35142
- Veliev, A. A. Investigation of the classical solution of an inverse two-dimensional boundary value problem for second-order quasilinear hyperbolic equations. (Russian. English and Azerbaijani summaries) 85k:35230
- Volkov, V. M. An inverse problem for a quasilinear equation of parabolic type. (Russian) 85k:35231
- Yakhno, V. G. The linearized multidimensional inverse Lamb problem. (Russian) 85k:35232  
See also Lavrent'ev, M. M.; et al., 85g:35119
- Zapreev, A. S. (with Tsatsko, V. A.) Determination of the right-hand side of the Helmholtz equation. (Russian) 85d:35107  
(with Tsatsko, V. A.) Some inverse problems of oscillation theory. (Russian) 85h:35226
- secondary classifications (35R30)
- Abdulkarimov, A. Determination of a harmonic function in a ball and outside a ball from its values on rays. (Russian) 85h:31005
- Ablowitz, M. J. (with Fokas, A. S.) Comments on the inverse scattering transform and related nonlinear evolution equations. 85g:35101a  
See also Fokas, A. S., 85g:35101b and 85k:35202
- Ariad'ev, V. A. (with Pogrebkov, A. K.; Polivanov, M. K.) The method of the inverse scattering problem in application to singular solutions of nonlinear equations. I. (Russian. English summary) 85d:35094a  
(with Pogrebkov, A. K.; Polivanov, M. K.) The method of the inverse scattering problem in application to singular solutions of nonlinear equations. II. (Russian. English summary) 85d:35094b
- Beale, Richard William Sur la méthode de scattering inverse. [On the inverse scattering method] (See 85b:35064)
- Brodskiĭ, M. A. See Strakhov, V. N., 85b:80007
- Bulych'ev, E. V. (with Glanko, V. B.) Uniqueness in certain inverse problems of the theory of heat conduction. 85c:80003
- Chernyavskii, A. G. Uniqueness of the solution of an inverse problem of diffraction theory. (Russian) 85h:78002
- Colton, David (with Sleeman, B. D.) Uniqueness theorems for the inverse problem of acoustic scattering. 85e:78044  
The inverse scattering problem for time-harmonic acoustic waves. 85m:78051
- Engelbrecht, Jüri Recent results on nonlinear waves and inverse problems in acoustoelasticity. 85a:73036
- Fal'kovskii, V. L. See Vigak, V. M., 85f:80012
- Fawcett, John On the stability of inverse scattering problems. 85m:73021
- Fokas, A. S. (with Ablowitz, M. J.) The inverse scattering transform for multidimensional (2 + 1) problems. 85g:35101b  
Inverse scattering of first-order systems in the plane related to nonlinear multidimensional equations. 85k:35201  
(with Ablowitz, M. J.) Method of solution for a class of multidimensional nonlinear evolution equations. 85k:35202  
See also Ablowitz, M. J., 85g:35101a
- Glasko, V. B. See Bulych'ev, E. V., 85c:80003
- González-Gascón, F. (with González-López, A.) The inverse problem concerning the Poincaré symmetry for second order differential equations. 85g:34012
- González-López, A. See González-Gascón, F., 85g:34012
- Gorbalkhuk, V. I. (with Lukiyanchuk, M. V.) A study of certain boundary properties of solutions of the equation  $\Delta u - c^2 u = 0$  in the half plane. (Russian) 85k:35059
- Hilpert, Martin Reconstruction of a free boundary. 85b:35067
- Ivankov, A. L. See Prilepko, A. I., 85c:82079
- Kohn, Robert V. (with Vogelius, Michael) Determining conductivity by boundary measurements. 85f:80008
- Kozlov, S. M. See Zhikov, V. V.; et al., 85k:35024
- Kyurkchan, A. G. An inverse scattering problem for the Helmholtz equation. (Russian) 85k:35060
- Ladyzhets, V. S. See Lavrent'ev, M. M., 85i:78002
- Lavrent'ev, M. M. (with Ladyzhets, V. S.) An inverse problem of geometric optics. (Russian) 85i:78002
- Liu, Jia Qi Inverse problems of differential equations, and numerical methods for them. (Chinese. English summary) 85g:65110
- Lukiyanchuk, M. V. See Gorbalkhuk, V. I., 85k:35059
- O'Carroll, Michael A survey of some recent results on the inverse spectral and scattering problems for differential operators. 85c:35069
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- Hashimoto, S. (with Morimoto, Yoshinori; Matsuzawa, Tadato) Opérateurs pseudodifférentiels et classes de Gevrey. [Pseudodifferential operators and Gevrey classes] 85f:35201
- Iftimie, V. Opérateurs pseudo-différentiels itérés et analyticité. [Iterated pseudodifferential operators and analyticity] 85g:35127
- Iordanov, I. V. See Popivanov, Pet' R. 85k:35241
- Ito, Masato On a Gårding's inequality. 85g:35128
- Jacob, Niels See Doppel, Karl. 85k:35237
- Kitada, Hitoshi A calculus of Fourier integral operators and the global fundamental solution for a Schrödinger equation. 85h:35233
- Levandoskii, S. Z. General calculus of pseudodifferential operators with symbols of power growth. (Russian) 85c:35094
- Lies, Otto (with Rodino, Luigi) Inhomogeneous Gevrey classes and related pseudodifferential operators. 85k:35239
- Lorenz, Michael Intersecting pairs of manifolds and anisotropic operators. 85j:35204
- Lu, Li Jiang The total symbol and adjoint operator of a pseudodifferential operator. (Chinese) 85k:35240
- Matsuzawa, Tadato See Hashimoto, S.; et al. 85f:35201
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- Nguyen Min Chiêng Parabolic pseudodifferential operators of variable order. (Russian) 85h:35234
- Palenichka, M. A. A system of pseudodifferential equations. (Russian) (Not in MR)
- Parenti, Cesare (with Rodino, Luigi) Parametries for a class of P.D. operators and applications. 85h:35235
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- Schulze, Bert-Wolfgang See Rempel, S. 85k:35242
- Taniguchi, Kazuo Multiproducts of Fourier integral operators and the fundamental solution for a hyperbolic system with involutive characteristics. 85e:35131
- secondary classifications (35S05)
- Álvarez Alonso, Josefina An algebra of  $L^p$ -bounded pseudodifferential operators. 85h:47057
- Asada, Kenji On the  $L^2$  boundedness theorem of nonhomogeneous Fourier integral operators in  $\mathbb{R}^n$ . 85j:47052
- Barkovskii, V. V. Scattering problems for two pseudodifferential operators. (Russian) 85a:35068
- Beals, Richard William (with Greiner, Peter C.) Pseudodifferential operators associated to hyperplane bundles. 85h:58163
- Boutet de Monvel, L. (with Guillemin, V.) ★ The spectral theory of Toeplitz operators. 85j:58141
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- Grigs, Alain (with Rothschild, Linda Preiss) A criterion for analytic hypoellipticity of a class of differential operators with polynomial coefficients. 85f:35054
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- Heffer, B. (with Robert, Didier) Calcul fonctionnel par la transformation de Mellin et opérateurs admissibles. (English summary) [Functional calculus by the Mellin transform and admissible operators] 85i:47052
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- Howe, Roger A symbolic calculus for nilpotent groups. 85k:22019
- Iftimie, V. Opérateurs hypoelliptiques dans des espaces de Gevrey. [Hypoelliptic operators in Gevrey spaces] 85k:35052
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- Ivrii, V. Ya. Sharp quasiclassical spectral asymptotics for  $h$ -pseudodifferential operators acting in bundles. (Russian) 85e:58152
- Karol', A. I. Pseudodifferential operators with operator-valued symbols. (Russian) 85m:47056
- Kinoshita, Michio Remarks on the parametrized symbol calculus. 85i:47053
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- Levandoskii, S. Z. The approximate spectral projector method as a general method of justifying the classical formula of spectral asymptotics. (Russian) 85j:35140
- Lyakhov, L. N. Singular pseudodifferential operators in the spaces  $H^s_2(E^{+}_{n+2})$ . (Russian) 85a:47050
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- Nardini, Franco Spectral analysis of a pseudodifferential operator related to the relativistic Stark effect. (Italian summary) 85g:81029
- Nguyen Min Chiêng Degenerate parabolic pseudodifferential operators of variable order. (Russian) 85g:35068
- Nolas, J.-C. Approximations semi-classiques du spectre de systèmes différentiels asymptotiques. (English summary) [Semiclassical approximations of the spectrum of asymptotic differential systems] 85d:58085
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- (with Senichkin, V. N.) The spectrum of  $C^*$ -algebras generated by pseudodifferential operators with discontinuous symbols. (Russian) 85c:47047
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- (with Gramchev, Todor) Propagation des singularités analytiques et de Gevrey pour un problème mixte d'un opérateur différentiel strictement hyperbolique. (English summary) [Propagation of analytic and Gevrey singularities for a class of mixed problems for second-order strictly hyperbolic operators] 85d:35069
- See also Gramchev, Todor. 85d:35068
- Rabinovich, V. S. A  $C^*$ -algebra of pseudodifferential operators. (Russian) 85e:47071
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- Rempel, S. (with Schmitt, T.) Pseudodifferential operators and the index theorem on supermanifolds. 85j:58139
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- Tucci, Maria See Pisani, Raffaele. 85m:35019
- Unterberger, André Symbolic calculi and the duality of homogeneous spaces. 85h:58166
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- Wodzicki, Mariusz Local invariants of spectral asymmetry. 85g:58089
- Wong, M. W. Fredholm pseudodifferential operators on weighted Sobolev spaces. 85d:47054
- Zaidman, S. Compacité de l'opérateur  $A(x, D) - A(z, D)$  dans l'espace  $F^{-1}(L^1(\mathbb{R}^n))$ . [Compactness of the operator  $A(x, D) - A(z, D)$  in the space  $F^{-1}(L^1(\mathbb{R}^n))$ ] 85g:47075

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- An, You Shan The Cauchy problem for a class of pseudodifferential operators. (Chinese. English summary) 85g:35129
- Kajitani, Kunihiko Nonlinear Cauchy-Kowalevski theorem for pseudodifferential operators. 85m:35055
- Lu, Li Jiang The Cauchy problem for a class of pseudodifferential operators. (Chinese) 85h:35072



Luan, Wen Gai Uniqueness and continuous dependence of Cauchy problem for first order pseudodifferential equations. **85d:35112a**

Uniqueness and continuous dependence of Cauchy problem for [first-] order pseudodifferential equations. **85d:35112b**

Makarov, A. A. The general boundary value problem in an infinite layer for systems of pseudodifferential equations with stabilised symbols. (Russian) (Not in MR)

Xu, Chao Jiang The fundamental solutions of the Cauchy problem for a class of hyperbolic pseudodifferential operators. (Chinese. English summary) **85h:35236**

secondary classifications (35S10)

Polyanov, L. V. (with Voronin, A. I.) On the dynamic symmetry of the stationary Schrödinger equation. **85c:81055**

Voronin, A. I. See Polyanov, L. V., **85c:81055**

Yoshikawa, Atsushi Branching of singularities of solutions and the initial value problem for weakly hyperbolic equations. (Japanese) **85b:35030**

### 35S15 Boundary value problems

Gramchev, Todor See Popivanov, Pet'ar R., **85h:35238**

Kryakvin, V. D. (with Rabinovich, V. S.) Noethericity of the operator of a boundary value problem for a domain with an unbounded boundary in weighted spaces of Hölder continuous functions. (Russian) **85h:35237**

Popivanov, Pet'ar R. (with Gramchev, Todor) An application of subelliptic operators to the mixed problem for a second order hyperbolic equation. **85h:35238**

Rabinovich, V. S. See Kryakvin, V. D., **85h:35237**

Rempel, S. (with Schulze, Bert-Wolfgang) Some unsolved problems in the theory of pseudodifferential boundary value problems. **85g:35130**

Schulze, Bert-Wolfgang Adjoints of elliptic boundary value problems. (See **85a:35003**)

Pseudodifferential boundary problems with discontinuous symbols. **85c:35133**

See also Rempel, S., **85g:35130**

secondary classifications (35S15)

Durand, Marc Boundary value problems analysis and pseudodifferential operators in acoustics. **85m:70053**

Fokht, A. S. Some weighted anisotropic inequalities. (Russian) **85f:40065**

Godin, Paul Nonlinear oblique derivative problems with nonsmooth solutions. **85c:35048**

Grubb, Gerd Remarks on trace estimates for exterior boundary problems. **85j:35145**

Nguyen Min Chiung Isomorphism of S. L. Sobolev spaces of variable order. (Russian) **85d:46045**

Rempel, S. (with Schulze, Bert-Wolfgang) ★ Index theory of elliptic boundary problems. **85h:58126**

An analytical index formula for elliptic pseudodifferential boundary problems in the half-space. (See **85a:35003**)

Schulze, Bert-Wolfgang See Rempel, S., **85h:58126**

### 35S99 None of the above, but in this section

Mendoza, Gerardo A. A necessary condition for solvability for a class of operators with involutive double characteristics. **85h:35239**

secondary classifications (35S99)

Komatsu, Takaaki Pseudodifferential operators and Markov processes. **85k:60105**

Lange, B. V. (with Rabinovich, V. S.) Discrete operators of convolution type with oscillating coefficients. (Russian) **85f:47053**

Pirion, Alain Microdistributions de Fourier classiques dans le cadre analytique réel. (English summary) [Classical Fourier microdistributions in the real-analytic framework] **85a:58005**

Rabinovich, V. S. See Lange, B. V., **85f:47053**

## 39-XX FINITE DIFFERENCES AND FUNCTIONAL EQUATIONS

### 39-06 Proceedings, conferences, etc.

secondary classifications (39-06)

Rabinovich, V. S. See Lange, B. V., **85f:47053**

Conference:

Mathematics at the service of man The second world conference on mathematics at the service of man, June 28-July 3, 1982, Las Palmas, Spain. In particular, topic 3: functional equations—theory and applications. (Not in MR)

Las Palmas The second world conference on mathematics at the service of man, June 28-July 3, 1982, Las Palmas, Spain. In particular, topic 3: functional equations—theory and applications. (Not in MR)

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Albert, Michael (with Baker, John A.) Functions with bounded  $n$ th differences. **85m:39001**

Baker, John A. See Albert, Michael, **85m:39001**

Brunner, Norbert A note on the difference property. **85j:39001**

Gordon, Sheldon P. On series of finite differences. **85c:39001**

#### 39A10 Difference equations

Agarwal, Ravi P. Initial value methods for discrete boundary value problems. **85d:39001**

Ashikovich, A. A. A criterion for weak nonoscillation of solutions of a difference system. (Russian) **85m:39002**

Asimova, G. M. The transformation operator for a system of first-order difference equations. (Russian. English and Azerbaijani summaries) **85f:39001**

Brown, Archibald Solutions of period three for a nonlinear difference equation. **85g:39001**

Ching, Sui Shing On a class of fourth-order linear recurrence equations. **85g:39002**

Jalvesimi, S. B. Continuation criteria for a difference equation of high order. **85d:39002**

Kaptagayev, É. S. See Ved', Yu. A., **85k:39002**

Kim, Ho A formula for the gradient of the solution of a finite difference equation and its application to an optimization problem. (Korean. English summary) **85a:39001**

Landman, Bruce See Layman, J. W., **85j:39002**

Lange, É. G. Determination of nonnegative solutions of a system of equations. (Russian) **85g:39003**

Länger, Helmut A formula for the solution of a system of difference equations over a commutative ring. **85c:39002**

Lan'osh, E. N. See Marko, V. F., (Not in MR)

Layman, J. W. (with Landman, Bruce) Note on the local growth of iterated polynomials. **85j:39002**

Malik, H. N. On the solution of  $\{E^2 + (\lambda p - 2)E + (1 - \lambda p - \lambda^2 q)\}^m G_n = n^k$ , by expansions and operators. **85c:39003**

Marko, V. F. (with Lan'osh, E. N.) Expansion of the solution of a system of recurrence equations into branching continued fractions. (Russian) (Not in MR)

Meinardus, G. Faktorisierung linearer Differenzengleichungen mit Anwendungen auf Matrizen. [Factorization of linear difference equations with applications to matrices] **85a:39002**

Popenda, Jerzy (with Szmanda, Błażej) On the oscillation of solutions of certain difference equations. **85k:39001**

Rodríguez Cano, José Juan Solution of systems of finite difference equations with constant coefficients in terms of convolution. (Spanish. English summary) (See **85g:60026**)

Romanenko, E. Yu. (with Slysarchuk, L. M.; Sharkovskii, A. N.) Asymptotic behavior of bounded solutions of systems of difference equations. (Russian) **85i:39001**

Sharkovskii, A. N. See Romanenko, E. Yu.; et al., **85i:39001**

Slysarchuk, L. M. See Romanenko, E. Yu.; et al., **85i:39001**

Szmanda, Błażej See Popenda, Jerzy, **85k:39001**

Ved', Yu. A. (with Kaptagayev, É. S.) The limit Cauchy problem for sum-difference systems. (Russian) **85k:39002**

secondary classifications (39A10)

Agarwal, Hukam Chand A unified class of polynomials. **85c:33013**

Banai, Nosar See Brenig, Léon, **85f:58108**

Brenig, Léon (with Banai, Nosar) The logarithmic link between the solvable population growth mapping and the quadratic mapping. **85f:58108**

Colaps, G. On difference equations of type  $\omega(n) = \omega(n-r) + \omega(n-s)$ . (Italian. English summary) **85i:05012**

El-Nadi, Khalifa El-Said On some boundary value problems in queueing theory. **85d:60170**

Easón, Matta A theorem on convex sequences. **85a:26016**

Lipitakis, Elias A. Isomorphic iterative methods in solving singularly perturbed elliptic difference equations. **85m:65104**

Mahler, Kurt On the analytic solution of certain functional and difference equations. **85c:30041**

Nishioka, Keiji A note on differentially algebraic solutions of first order linear difference equations. **85m:12003**

Osek, K. A certain property of polynomials. **85c:11023**

Parashar, B. P. The difference operators and extended Laguerre polynomials. **85b:33012**

Smirnitakii, Yu. A. (with Sobolevskii, P. E.) Pointwise estimates of the Green function of the resolvent of a difference elliptic operator. (Russian) **85m:65111**

Smítal, Jaroslav (with Smítalová, K.) Erratum: "Structural stability of nonchaotic difference equations" [J. Math. Anal. Appl. **90** (1982), no. 1, 1-11; MR **84d:58046**]. **85f:58065**

Smítalová, K. See Smítal, Jaroslav, **85f:58065**

Sobolevskii, P. E. See Smirnitakii, Yu. A., **85m:65111**

Somowski, A. Finite-dimensional approximation theory with application to stabilization of systems with time delay. **85c:93036**

Yanagihara, Niro Hypertranscendence of solutions of some difference equations. **85c:12005**

Meromorphic solutions of some difference equations and conformal mapping of infinite strips. **85c:30024**

Factorization of entire solutions of some difference equations. **85j:30054**

#### 39A11 Stability of difference equations

Gajewski, Krzysztof On the stability conditions of difference equations obtained by the comparison method. (Russian summary) **85i:39002**

Garashchenko, F. G. Investigation of the practical stability of systems of difference equations by means of the second method of Lyapunov. (Russian) **85m:39003**

Il'yasov, K. Stability with respect to part of the variables of systems of difference equations. (Russian) **85a:39003**

Stability with respect to part of the variables of solutions of linear difference equations. (Russian) **85j:39003**

Kalitin, B. S. (with Russev, É.) Qualitative characteristics of the neighborhood of a stable zero solution of a discrete system. (Russian. French summary) **85f:39002**

Lapshina, R. B. (with Shestakov, A. A.) A theorem on the convergence of solutions of a difference system to the null-set of the majorant of the Lyapunov function. (Russian) **85i:39003**

Meimaridou, A. See Schinas, J., **85d:39003**

Russev, É. See Kalitin, B. S., **85f:39002**

Schinas, J. (with Meimaridou, A.) On the application of Lyapunov's second method to multivalued difference equations. **85d:39003**

Shestakov, A. A. See Lapshina, R. B., 85i:39003

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Amikovich, A. A. A criterion for weak nonoscillation of solutions of a difference system. (Russian) 85m:39002

Aulbach, Bernd ★ Continuous and discrete dynamics near manifolds of equilibria. 85g:34040

Cushman-Roisin, Benoit Analytical, linear stability criteria for the leap-frog, Dufort-Frankel method. 85k:65075

Feng, En Bo Comparison principle of the discrete large-scale systems in the theory of stability and its applications. 85m:93027

Kaptagayev, È. S. See Ved', Yu. A., 85k:39002

Kaptagayev, V. M. (with Lychak, M. M.) Elements of the theory of evolution of sets and stability of these processes. 85a:93100

Lychak, M. M. See Kuntsevich, V. M., 85a:93100

Styusarchuk, V. E. New theorems on the instability of difference systems in the first approximation. (Russian) 85a:65173

Staroshelev, E. F. Stability in the first approximation of nonlinear dynamical systems described by systems of ordinary differential equations and finite-difference equations. (Russian) 85e:39032

Ved', Yu. A. (with Kaptagayev, È. S.) The limit Cauchy problem for sum-difference systems. (Russian) 85k:39002

### 39A12 Discrete version of topics in analysis

Aptekarev, A. I. (with Nikishin, E. M.) The scattering problem for a discrete Sturm-Liouville operator. (Russian) 85d:39004

Bogolyubskaya, A. A. (with Serdyukova, S. I.) ★ К исследованию спектра одной разностной краевой задачи. (Russian) [On the investigation of the spectrum of a difference boundary value problem] 85f:39003

Cobos Bueno, José On the existence of a Lyapunov function. (Spanish. English summary) 85j:39004

Collatz, Lothar Anwachsende Schwingungen bei einigen Differenzengleichungen mit multiplikativem Verzögerungsglied. (English summary) [Unboundedly increasing oscillations in some difference equations with multiplicative delay term] 85a:39004

Fitzpatrick, W. J. (with Grimm, L. J.) Analytic theory of linear difference equations. 85i:39004

Goleț, I. See Neamtu, N. N., 85b:39002

Grimm, L. J. See Fitzpatrick, W. J., 85i:39004

Hooker, John W. (with Patula, William T.) A second-order nonlinear difference equation: oscillation and asymptotic behavior. 85b:39001

Mertsis, B. G. Solution and identification of discrete state-space equations via Walsh functions. (Not in MR)

Neamtu, N. N. (with Goleț, I.) Application of the Laplace transform in the solution of discrete integral equations. (Romanian. English summary) 85b:39002

Nikishin, E. M. See Aptekarev, A. I., 85d:39004

Patula, William T. See Hooker, John W., 85b:39001

Ryaben'kii, V. S. (with Sofronov, I. L.) Difference spherical functions. (Russian) 85e:39001

Serdyukova, S. I. See Bogolyubskaya, A. A., 85f:39003

Sofronov, I. L. Nondegeneracy of equations connected with the method of difference potentials. (Russian) (Not in MR)

See also Ryaben'kii, V. S., 85e:39001

Szmanda, Blaise Oscillation criteria for second order nonlinear difference equations. 85e:39002

Teptin, A. L. Expansion of a difference operator and the sign of the Green function of a multipoint difference boundary value problem. (Russian) (See 85h:00006)

secondary classifications (39A12)

Abdi, W. H. Some problems of discrete function theory. 85c:30049

Alexander, Shlomo See Domany, Eytan; et al., 85h:82033

Baranov, A. A. (with Gostev, V. I.) Design of systems of variable structure, operating in the switching mode according to given performance indices. (Russian) (Not in MR)

Bensimon, D. See Domany, Eytan; et al., 85h:82033

Briggs, William L. (with Newell, A. C.; Sarie, Talib) Focusing: a mechanism for instability of nonlinear finite difference equations. 85f:65086

Ciegis, Raimondas Some integral and summary estimates for the Green function. (Russian. English and Lithuanian summaries) 85e:34024

Coppersmith, S. N. (with Fisher, Daniel S.) Pinning transition of the discrete sine-Gordon equation. 85d:82082

Corduneanu, C. Almost periodic discrete processes. 85h:42016

Derr, V. Ya. Nonoscillation of solutions of differential and difference equations with respect to a system of functionals. (Russian) 85k:34071

Dodsiuk, Josef Difference equations, isoperimetric inequality and transience of certain random walks. 85m:58185

Domany, Eytan (with Alexander, Shlomo; Bensimon, D.; Kadanoff, Leo P.) Solutions to the Schrödinger equation on some fractal lattices. 85h:82033

Engl, H. W. An analytic representation for self-maps of a countably infinite set and its cycles. 85d:04001

Filer, Z. E. Generalization of the Taylor, Newton and Lagrange formulas and their applications to the solution of differential and difference equations. (Russian) 85g:85090

Fisher, Daniel S. See Coppersmith, S. N., 85d:82082

Fisher, Michael Ernest Stability of a class of delay-difference equations. 85i:92008

Gostev, V. I. See Baranov, A. A., (Not in MR)

Kacsorek, T. (with Kurek, Jerzy E.) Separability-assignment problem for  $q$ -dimensional linear discrete-time systems. 85e:93012

Kadanoff, Leo P. See Domany, Eytan; et al., 85h:82033

Kurek, Jerzy E. See Kacsorek, T., 85e:93012

Lange, B. V. (with Rabinovich, V. S.) Discrete operators of convolution type with oscillating coefficients. (Russian) 85f:47053

Lun'kov, V. A. (with Tonkov, E. L.) On the question of the controllability of a linear periodic system with discrete time. (Russian) (See 85h:00006)

Malec, Marian (with Rosati, Mario Valerio) Weak monotonicity for nonlinear systems of functional-finite difference inequalities of parabolic type. (Italian summary) 85g:35124

Mednykh, A. D. Discrete analytic functions and Taylor series. (Russian) 85c:30050

Meimaridou, A. See Schinas, J., 85d:39003

Nevalinna, Olavi On the stability of discrete Volterra equations. 85f:65126

Newell, A. C. See Briggs, William L.; et al., 85f:65086

Prisva, G. I. Some classes of orthogonal polynomials of certain discrete variables. (Russian. English summary) 85c:33008

Rabinovich, V. S. See Lange, B. V., 85f:47053

Rosati, Mario Valerio See Malec, Marian, 85g:35124

Sarie, Talib See Briggs, William L.; et al., 85f:65086

Schinas, J. (with Meimaridou, A.) On the application of Lyapunov's second method to multivalued difference equations. 85d:39003

Skrynnikov, A. V. Reduction of integro-differential and difference operators to normal form. (Russian. English summary) 85j:45034

Sualov, S. K. The 9j-symbols as orthogonal polynomials in two discrete variables. 85g:81074

Tonkov, E. L. See Lun'kov, V. A., (85h:00006)

Tu, Shih Tong A generalization of monodiffic function. 85g:30083

Velukutty, K. K. Discrete bianalytic functions. 85b:30064

Weinmüller, Ewa A difference method for a singular boundary value problem of second order. 85i:65103

### 39A70 Difference operators [See also 47B39.]

Browne, Patrick J. (with Nilsen, R. V.) On difference operators and their factorization. 85j:39005

Frolov, I. S. Spectra of certain difference operators. (Russian) 85g:39004

Kamenskii, A. G. A counterexample in the theory of difference operators. (Russian) 85d:39005

Nilsen, R. V. See Browne, Patrick J., 85j:39005

secondary classifications (39A70)

Aptekarev, A. I. (with Nikishin, E. M.) The scattering problem for a discrete Sturm-Liouville operator. (Russian) 85d:39004

Chernomikh, E. V. Spectral analysis of some nonselfadjoint difference operators. (Russian) 85j:47037

Nonselfadjoint perturbation of arbitrary order of certain difference operators. (Russian) (Not in MR)

Delyon, François (with Souillard, Bernard) The rotation number for finite difference operators and its properties. 85d:60123

Figotin, A. L. (with Pastur, L. A.) The positivity of the Lyapunov exponent and the absence of the absolutely continuous spectrum for the almost-Mathieu equation. 85i:47035

Mukhamediev, G. Kh. The spectrum of a difference operator and some imbedding theorems. (Russian) 85h:47039

Nikishin, E. M. See Aptekarev, A. I., 85d:39004

Pastur, L. A. See Figotin, A. L., 85i:47035

Popenda, Jerzy (with Szmanda, Blaise) On the oscillation of solutions of certain difference equations. 85k:39001

Pragman, C. The formal classification of linear difference operators. 85c:12006

Simon, Barry Some Jacobi matrices with decaying potential and dense point spectrum. 85d:47033

Souillard, Bernard See Delyon, François, 85d:60123

Szmanda, Blaise See Popenda, Jerzy, 85k:39001

### 39A99 None of the above, but in this section

Kaporin, I. E. See Samarskii, A. A.; et al., 85d:39006

Kucherov, A. B. See Samarskii, A. A.; et al., 85d:39006

Nikolaev, E. S. See Samarskii, A. A.; et al., 85d:39006

Samarskii, A. A. (with Kaporin, I. E.; Kucherov, A. B.; Nikolaev, E. S.) Some modern methods of solution of difference equations. (Russian) 85d:39006

secondary classifications (39A99)

Dee, D. (with Ghil, M.) Boolean difference equations. I. Formulation and dynamic behavior. 85c:92004

Ghil, M. See Dee, D., 85c:92004

Haimo, Deborah Tepper Inversion and representation for the Poisson-Laguerre transform. 85h:44006

Mayer, Dieter H. (with Roepstorff, G.) Strange attractors and asymptotic measures of discrete-time dissipative systems. 85b:58066

Roepstorff, G. See Mayer, Dieter H., 85b:58066

Sonnenmeier, J. Projections dans  $R^{2n}$  parallèles à certains sous-espaces. [Projections in  $R^{2n}$  parallel to certain subspaces] 85a:26027

### 39Bxx Functional equations [See also 30D05.]

#### 39B05 General

Acsai, J. Diamonds are not the Cauchy extensionists' best friend. 85a:39005

Altov, Zh. Existence of an invariant curve of a system of difference equations in a critical case. (Russian) 85i:39005

Burlacu, E. (with Cristici, B.; Neagu, M.) Some remarks concerning the character set of the Pompeiu group. (Romanian summary) 85i:39006

Cristici, B. See Neagu, M., 85g:39006 and Burlacu, E.; et al., 85i:39006

- Haruki, S. On the general solution of the triangle mean value equation. 85g:39005  
 Johnson, Gordon G. Homeomorphisms, functional equations and linear independence. (Spanish summary) 85c:39004  
 Losonczi, L. (with Maksa, Gy.) On some functional equations of the information theory. 85b:39003  
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 Urban, Paweł Continuous solutions of the functional equation  $f(xf^k(y) + yf^l(x)) = f(x)f(y)$ . 85f:39004  
 Węgrzyk, Roman On the extension of integrable solutions of a functional equation of  $n$ th order. 85f:39005

## secondary classifications (39B05)

- Acsá, J. (with Saaty, T. L.) Procedures for synthesizing ratio judgements. 85a:90002  
 Agrawal, Hukam Chand A unified class of polynomials. 85c:33013  
 Comand, Michel Étude des solutions de l'équation fonctionnelle de Feigenbaum. (English summary) [Study of the solutions of the Feigenbaum functional equation] 85f:58083  
 Eckmann, J.-P. (with Wittwer, P.) Sur un cas limite de l'équation de Cvitanović-Feigenbaum. (English summary) [On a limiting case of the Cvitanović-Feigenbaum equation] 85i:58088  
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 Kominek, Z. Some remarks on the Boyd-Wong theorem. (Serbo-Croatian summary) 85b:54066  
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 Squillante, Massimo Identities of functional transformations. (Italian) 85j:54035  
 Wittwer, P. See Eckmann, J.-P., 85i:58088

## 39B10 Equations containing iterates, equations of rank one

- Bajraktarević, Mahmud Sur certaines solutions continues de l'équation fonctionnelle  $A\psi = \psi f$  et leur application à la recherche des fonctions moyennes. [Some continuous solutions of the functional equation  $A\psi = \psi f$  and their application to the study of averaging functions] 85g:39007  
 Sur la solution unique continue de l'équation fonctionnelle  $\varphi + A\varphi = F^*$ . (Serbo-Croatian summary) [On the unique continuous solution of the functional equation  $\varphi + A\varphi = F^*$ ] 85i:39007a  
 Sur une solution continue de l'équation fonctionnelle  $A\psi = \psi f$ . (Serbo-Croatian summary) [On a continuous solution of the functional equation  $A\psi = \psi f$ ] 85i:39007b  
 Baker, John A. (with Wilder, B. E.) Constructing means on certain continua and functional equations. 85c:39005  
 Banas, József (with Hajnos, Andrzej; Wędrychowicz, Stanisław) On existence and asymptotic behavior of solutions of some functional equations. 85d:39007  
 Brydak, Dobiesław Monotonic solutions of a nonlinear functional equation. 85h:39001  
 Das, Kalyan A note on a functional equation. 85c:39003  
 Gronau, Detlef Two iterative functional equations for power series. 85d:39008  
 Hajnos, Andrzej See Banas, József; et al., 85d:39007  
 Jarczyk, W. Generic properties of nonlinear functional equations. 85k:39003  
 Malenica, Mirjana On the solutions of the functional equation  $\varphi(x) + \varphi^2(x) = F(x)$ . 85g:39008  
 On the solutions of the functional equation  $\varphi(f(x)) + \varphi(x) = F(x)$  using  $\Theta$ -summability. (Serbo-Croatian summary) 85b:39004  
 Smajdor, A. (with Smajdor, W.) Multivalued solutions of a functional equation. 85d:39009  
 Smajdor, W. See Smajdor, A., 85d:39009  
 Wędrychowicz, Stanisław See Banas, József; et al., 85d:39007  
 Wilder, B. E. See Baker, John A., 85c:39005

## secondary classifications (39B10)

- Baker, John A. See Blanton, G., 85c:26004  
 Bellissard, J. (with Lima, R.; Testard, D.) A metal-insulator transition for the almost Mathieu model. 85i:82055  
 Blanton, G. (with Baker, John A.) Iteration groups generated by  $C^n$  functions. 85c:26004  
 Charalambides, Ch. A. (with Koutras, M.) On the differences of the generalized factorials at an arbitrary point and their combinatorial applications. 85i:05011  
 Cowen, Carl C. Commuting analytic functions. 85i:30054  
 Koutras, M. See Charalambides, Ch. A., 85i:05011  
 Lima, R. See Bellissard, J.; et al., 85i:82055  
 McCarthy, P. J. The general exact bijective continuous solution of Feigenbaum's functional equation. 85h:58130  
 Minsker, Steven Area-splitting centroids. 85f:34144  
 Testard, D. See Bellissard, J.; et al., 85i:82055

## 39B20 Equations for one unknown function of one variable, rank greater than one

- Fehér, J. A functional equation with polynomials. 85a:39006  
 Jankowski, Tadeusz On solutions of a functional equation of order  $r$  in a special class of functions. (Serbo-Croatian summary) 85c:39006  
 Parahoo, A. J. An asymptotic form of Cauchy's functional equation. 85c:39007  
 Poggi, Carla A system of functional equations related to the notion of locality in information theory. (Italian. English and French summaries) 85a:39007  
 Skof, Fulvia On a certain functional equation. (Italian. English summary) 85h:39002

- Vereš, Sándor On a functional equation in connection with information theory. 85g:39009

## secondary classifications (39B20)

- Chikias, Demetris P. K. (with Jannusis, A.) Polynomial invariant measures for maps on the unit interval. 85h:58098  
 Jannusis, A. See Chikias, Demetris P. K., 85h:58098  
 Przeworska-Rolewicz, D. Generalized Fox integral equations solved by functional equations. 85j:45014  
 You, Zhao Yong Methods for constructing triangular norm. (Chinese summary) 85b:54051

## 39B30 Equations for several unknown functions of one variable, systems

- Acsá, J. (with Kannappan, Pl.) General two-place information functions. 85c:39008  
 (with Chung, J. K.) Integrable solutions of functional equations of a general type. 85i:39008  
 Baron, Karol On approximate solutions of a system of functional equations. 85c:39004  
 Chung, J. K. See Acsá, J., 85i:39008  
 Gurdial, On measurable solutions of a functional equation and its application to information theory. 85i:39009  
 Jarczyk, W. On linear functional equations in the determinate case. (Serbo-Croatian summary) 85f:39006  
 Kannappan, Pl. See Acsá, J., 85c:39008  
 Lundberg, Anders Generalized distributivity for real, continuous functions. I. Structure theorems and surjective solutions. 85d:39010

## secondary classifications (39B30)

- Burkart, Uhlend Verallgemeinerte Schroedergleichung und Prä-Schroedergleichungen. [Generalized Schröder equation and pre-Schröder equations] 85d:39011  
 Lau, Ka Sing (with Rao, Calyampuli Radhakrishna) Integrated Cauchy functional equation and characterizations of the exponential law. 85j:62012a  
 (with Rao, Calyampuli Radhakrishna) Corrigendum: "Integrated Cauchy functional equation and characterizations of the exponential law". 85j:62012b  
 Rao, Calyampuli Radhakrishna See Lau, Ka Sing, 85j:62012a and 85j:62012b

## 39B40 Equations for functions of several variables

- Darsow, W. F. (with Frank, M. J.) Associative functions and Abel-Schröder systems. 85f:39007  
 Frank, M. J. See Darsow, W. F., 85f:39007  
 Gregorczyk, A. (with Tabor, J.) Monotonic solution of the translation equation. 85c:39009  
 Kuchko, L. P. Local  $C^\infty$ -solvability of nonlinear functional equations. (Russian) 85k:39004  
 Laird, P. G. (with Mills, Jane) On systems of linear functional equations. 85c:39010  
 Mills, Jane See Laird, P. G., 85c:39010  
 Neagu, M. See Tudor, Gh. M., 85h:39004  
 Paganoni, Luigi Solution of a functional equation on a restricted domain. (Italian. English summary) (Not in MR)  
 (with Rusconi, Daniela) A characterization of some classes of functions  $F$  of the form  $F(x, y) = g(\alpha f(x) + \beta f(y) + \gamma)$  or  $F(x, y) = \varphi(h(x) + k(y))$ . 85f:39008  
 Papp, F. J. A note on the functional equations satisfied by Russell's function for wage income and optimal consumption plan. (French and Spanish summaries) 85j:39006  
 Some generalizations of the functional equation satisfied by Russell's "wage income" and "optimal consumption plan" functions. 85j:39007  
 Rusconi, Daniela See Paganoni, Luigi, 85f:39008  
 Székelyhidi, László Almost periodicity and functional equations. 85h:39003  
 Tabor, J. See Gregorczyk, A., 85c:39009  
 Tudor, Gh. M. (with Neagu, M.) Des équations fonctionnelles et des inégalités trigonométriques. (Romanian summary) [Functional equations and trigonometric inequalities] 85h:39004  
 Volkmann, Peter (with Weigel, Herbert) Über ein Problem von Fenyő. [On a problem of Fenyő] 85h:39005  
 Weigel, Herbert See Volkmann, Peter, 85h:39005

## secondary classifications (39B40)

- Haruki, H. On a functional equation for Jacobi's elliptic function  $cn(z; k)$ . 85m:33003  
 Kannappan, Pl. (with Sander, W.) A mixed theory of information. VIII. Inset measures depending upon several distributions. 85i:94009  
 On a multiplace functional equation related to information measures and functions. 85b:94006  
 Laczkovich, M. On the difference property of the class of pointwise discontinuous functions and of some related classes. 85j:26003  
 Sander, W. See Kannappan, Pl., 85i:94009

## 39B50 Functional equations on algebraic structures

- Burkart, Uhlend Verallgemeinerte Schroedergleichung und Prä-Schroedergleichungen. [Generalized Schröder equation and pre-Schröder equations] 85d:39011  
 Corovei, I. On some functional equations for the homomorphisms. (Romanian summary) 85k:39005  
 The sine functional equation for groups. 85d:39012  
 Dunn, K. B. (with Lidl, R.) Iterative roots of functions over finite fields. 85k:39006  
 Haruki, S. A truncated cube functional equation. 85c:39005  
 Krapeš, Aleksandar Generalized balanced functional equations  $n$ -ary groupoids. (See 85i:20005)  
 Kulik, V. L. Solvability of linear algebraic systems with variable coefficients given on a torus. (Russian) 85h:39006  
 Lidl, R. See Dunn, K. B., 85k:39006



- Madaan, V. D. (with Nath, Prem) On extensions of subgroup homomorphisms to homomorphisms of groups. **85e:39006**
- Mosner, Zenon Sur le prolongement de la solution de l'équation de translation. [Extension of the solution of the translation equation] **85g:39010**
- Nath, Prem See Madaan, V. D., **85e:39006**
- Prešić, Slavica B. A general solving method for one class of functional equations. (See **85i:20005**)
- Székelyhidi, László Local polynomials and functional equations. **85i:39010**

secondary classifications (39B50)

- Bogdanović, Stojan On a problem of J. D. Kečkić concerning semigroup functional equations. (See **85i:20005**)
- Gronau, Detlef Two iterative functional equations for power series. **85d:39008**
- Melter, R. (with Rudeanu, S.) Functions characterized by functional Boolean equations. **85e:06019**
- Przeworska-Rolewicz, D. Non-Leibniz algebras. **85e:44008**
- Rudeanu, S. See Melter, R., **85e:06019**
- Sander, W. Applications of certain  $\mathcal{R}$ -families. **85i:28002**
- Taylor, Mark Adrian On a problem of Krapeš. (See **85i:39005**)

### 39B70 Functional equations on abstract spaces or structures

- Cserwik, S. Continuous solutions of a system of functional inequalities. (Serbo-Croatian summary) **85b:39007**
- Ebanks, Bruce R. Kurepa's functional equation on semigroups. **85g:39011**
- Fenyő, István Observations on some theorems of D. H. Hyers. (Italian. English summary) **85a:39006**
- Forti, Gian Luigi On an alternative functional equation related to the Cauchy equation. **85e:39011**
- Turda, Erwin Set stability for a functional equation of iterative type. **85a:39009**
- Wachnicki, Eugeniusz On a nonhomogeneous iterated linear equation. **85j:39008**

secondary classifications (39B70)

- Albert, Michael (with Baker, John A.) Functions with bounded  $n$ th differences. **85m:39001**
- Baker, John A. (with Wilder, B. E.) Constructing means on certain continua and functional equations. **85c:39005**
- See also Albert, Michael, **85m:39001**
- Jarczyk, W. Generic properties of nonlinear functional equations. **85k:39003**
- Lutz, D. A. Über die Konvergenz operatorwertiger Cosinusfunktionen mit gestörten infinitesimalen Erzeuger. (English summary) [On the convergence of operator-valued cosine functions with perturbed infinitesimal generator] **85a:47046**
- Micako, A. (with Palczewski, B.) On convergence of successive approximations of some generalized contraction mappings. **85a:54023**
- Miller, John Boris The Euler-Maclaurin formula generated by a summation operator. **85f:47018**
- Myjak, József Orlicz type category theorems for functional and differential equations. **85g:47076**
- Pachpatte, B. G. On a nonlinear Volterra integral-functional equation. **85f:45005**
- Palczewski, B. See Micako, A., **85a:54023**
- Singh, Harshinder (with Vasudeva, H. L.) Exponential-cosine operator-valued functional equation in the strong operator topology. **85k:47085**
- Slyusarchuk, V. E. Solvability of functional and functional-differential equations in a space of bounded functions on the line. (Russian) **85i:34038**
- Sofronov, I. L. Nondegeneracy of equations peculiar to the method of difference projectors. (Russian) **85h:47013**
- Turinici, M. A generalization of Altman's ordering principle. **85f:54005**
- Várhelyi, Á. The approximate solution of nonlinear functional equations by a Steffensen-type method. **85h:65129**
- Vasudeva, H. L. See Singh, Harshinder, **85k:47085**
- Villella-Bressan, Rosanna (with Webb, Glenn F.) Nonautonomous functional equations and nonlinear evolution operators. (Italian summary) **85m:47069**
- Webb, Glenn F. See Villella-Bressan, Rosanna, **85m:47069**
- Węgrzyk, Roman Fixed-point theorems for multivalued functions and their applications to functional equations. **85g:47086**
- Wilder, B. E. See Baker, John A., **85c:39005**

### 39B99 None of the above, but in this section

secondary classifications (39B99)

- Barnabei, Marielena (with Brini, Andrea; Nicoletti, Giorgio) A general umbral calculus in infinitely many variables. **85g:05025**
- Brini, Andrea See Barnabei, Marielena; et al., **85g:05025**
- Ebert, Udo Measures of distance between income distributions. **85h:90041**
- Gehrig, Wilhelm Two characterizations of Theil's concentration measure. **85f:90023**
- Hansen, D. J. Cauchy's multiplicative functional equation in the semigroup of Boolean matrices. **85i:15026**
- Kečkić, Jovan D. Reproductivity of some equations of analysis. **85c:34024**
- Mira, Christian (with Müllenbach, Sabine) Sur l'itération fractionnaire d'un endomorphisme quadratique. (English summary) [Fractional iteration of a quadratic endomorphism] **85e:58077**
- Müllenbach, Sabine See Mira, Christian, **85e:58077**
- Nicoletti, Giorgio See Barnabei, Marielena; et al., **85g:05025**
- Rosati, Mario Valerio Some results concerning weak monotonicity for nonlinear systems of functional-finite difference inequalities of parabolic type. (Italian summary) **85e:55116**
- Ungar, Abraham Addition theorems for solutions to linear homogeneous constant coefficient ordinary differential equations. **85m:34109**

### 39C05 Functional inequalities [See also 26Dxx.]

- Alina, Claudi On convex triangle functions. **85f:39006**

secondary classifications (39C05)

- Albert, Michael (with Baker, John A.) Functions with bounded  $n$ th differences. **85m:39001**
- Baker, John A. See Albert, Michael, **85m:39001**
- Sorin, S. On a pair of simultaneous functional equations. **85d:90121**

## 40-XX SEQUENCES, SERIES, SUMMABILITY

### 40-01 Elementary exposition; textbooks

secondary classifications (40-01)

- Nikol'skii, S. M. ★ Курс математического анализа. Том I. (Russian) [Course in mathematical analysis. Vol. I] **85f:00001a**

### 40-03 Historical (must also be assigned at least one classification number from Section 01)

secondary classifications (40-03)

- Berndt, Bruce C. Chapter 6 of Ramanujan's second notebook. **85d:01022** (Bresinaki, Claude) See Padé, H., **85k:01055**
- Padé, H. ★ Œuvres. (French) [Collected works] **85k:01055**

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### 40-04 Explicit machine computation and programs (not the theory of computation or programming)

secondary classifications (40-04)

- Szafranski, W. The high-precision summation of series whose terms are rational numbers. **85b:65006**

## 40Axx Convergence and divergence of infinite limiting processes

- Embrechts, Paul The asymptotic behaviour of series and power series with positive coefficients. **85e:40001**

### 40A05 Convergence and divergence of series and sequences

- Audinarayana Moorthy, S. The behaviour of a real series in relation to a derived set. **85j:40001**
- Choudhary, B. A note on  $l$ -to- $l$  Nörlund method. **85h:40001a**  
Errata: "A note on  $l$ -to- $l$  Nörlund method". **85h:40001b**
- Davydov, N. A.  $K$ -matrices that are nonsumming divergent series with terms that vanish. (Russian) **85c:40001**
- Erdős, Paul (with Weiss, Gary) Dot product rearrangements. **85d:40001**
- Foster, D. M. E. (with Phillips, G. M.) A generalization of the Archimedean double sequence. **85g:40001**
- Hetman, Bolesław (with Jasek, Bronisław) A theorem on subseries of real series. (Russian summary) **85k:40001**
- Jasek, Bronisław See Hetman, Bolesław, **85k:40001**
- Jodelt, Max, Jr. A point about  $N \times N$  matrices and  $l^\infty$ . **85h:40002**
- Móricz, Ferenc Some remarks on the notion of regular convergence of multiple series. **85f:40001**
- Odoni, R. W. K. Some relations connecting measures of convergence for series with nonincreasing terms. **85m:40001**
- Oja, Eve (with Rinne, M.) The rate of convergence of a convolution of sequences. (Russian. English summary) **85i:40001**
- Phillips, G. M. Archimedes and the complex plane. **85h:40003**  
See also Foster, D. M. E., **85g:40001**
- Rinne, M. See Oja, Eve, **85i:40001**
- Šlaković, Semirha The asymptotic behavior of  $D$ -means of Dirichlet series. (Serbo-Croatian. English summary) **85j:40002**
- Weiss, Gary See Erdős, Paul, **85d:40001**

secondary classifications (40A05)

- Abel, M. A topological algebra of matrices preserving convergence. (Russian. English summary) **85j:46085**
- Bresinaki, Claude (with Delahaye, J.-P.; Germain-Bonne, B.) Convergence acceleration by extraction of linear subsequences. **85g:65014**
- Dave, S. K. On the convergence of ultraspherical series. **85m:42026**
- Delahaye, J.-P. Operations sur des familles de suites et accélérabilité. [Operations on families of sequences, and accelerability] **85k:65048**  
See also Bresinaki, Claude; et al., **85g:65014**
- Drăghiceanu, I. C. On a family of real number sequences and some of their applications. (Romanian summary) **85i:60032**
- Germain-Bonne, B. See Bresinaki, Claude; et al., **85g:65014**
- Klippert, John Accelerating the convergence of an infinite series. **85j:65003**
- Móricz, Ferenc Generalization of two theorems of Kronecker and of Knopp for multiple numerical series. **85g:40002**
- Speck, G. P. On solving  $\sum_{n=0}^{\infty} a_n x^n = 0$ . **85h:26027**

Tidjane Diallo, A. On the convergence of the monotone sequences of operator-valued functions. 85f:47015

Twitt, M. M. Hartogs-Faber series and domains. (Russian) 85i:33003

#### 40A10 Convergence and divergence of integrals

Byrnes, J. S. (with Giroux, A.; Shisha, Oved) Riemann sums and improper integrals of step functions related to the prime number theorem. 85f:40002

Giroux, A. See Byrnes, J. S.; et al., 85f:40002

Shisha, Oved. See Byrnes, J. S.; et al., 85f:40002

secondary classifications (40A10)

Chesburin, Yu. P. The improper integral of generalized functions. (Russian) 85i:40050

Shawyer, Bruce L. R. (with Tamm, Ludwig) Analytic continuation of power series by regular generalized weighted means. 85e:30005

Tamm, Ludwig. See Shawyer, Bruce L. R., 85e:30005

#### 40A15 Convergence and divergence of continued fractions [See also 30B70.]

Batyuk, Yu. R. Vorpitaki's criterion for a matrix integral continued fraction. (Russian) (Not in MR)

Bednar, D. I. (with Kuchinskaya, Kh. I.) Absolute convergence of the even and odd parts of a two-dimensional corresponding continued fraction. (Russian) 85i:40002

Gill, John. Converging factors for certain continued fractions  $K(a_n/1)$ , where  $|a_n| < 1$ . 85j:40003

Jacobson, Lisa. Further results on convergence acceleration for continued fractions  $K(a_n/1)$ . 85e:40002

Jones, William B. (with Thron, W. J.; Waadeland, Haakon) Truncation error bounds for continued fractions  $K(a_n/1)$  with parabolic element regions. 85i:40003

Kuchinskaya, Kh. I. Sufficient conditions for absolute convergence of two-dimensional continued fractions. (Russian) 85j:40004

See also Bednar, D. I., 85i:40002

Michailik, B. A new interpolation formula in the form of a continued fraction. 85k:40002

Mikhailchuk, R. I. (with Syavavko, M. S.) Estimation of the number of terms of a continued fraction that suffice for calculations with a prescribed exactness. (Russian) (Not in MR)

Niethammer, W. (with Wietschorke, H.) On the acceleration of limit periodic continued fractions. 85e:40003

Skorobogat'ko, V. Ya. ★ Теория ветвящихся цепных дробей и ее применение в вычислительной математике. (Russian) [The theory of branching continued fractions and its application in numerical mathematics] 85j:40005

Sofe, Anthony. Continued fractions. 85j:40006

Sus, O. N. Convergence to a function of its formal expansion into a two-dimensional corresponding continued fraction. (Russian) 85j:40007

Syavavko, M. S. See Mikhailchuk, R. I., (Not in MR)

Thron, W. J. See Jones, William B.; et al., 85i:40003

Waadeland, Haakon. Tales about tails. 85f:40003

See also Jones, William B.; et al., 85i:40003

Wietschorke, H. See Niethammer, W., 85e:40003

secondary classifications (40A15)

Bednar, D. I. Tests for convergence of branching continued fractions. (Russian. English summary) 85d:30008

(Bresinski, Claude) See Padé, H., 85k:01055

Kuchinskaya, Kh. I. Two-dimensional continued fractions corresponding to expansions in double power series at two points. (Russian) 85f:41019

Padé, H. ★ (Euvres. (French) [Collected works] 85k:01055

Peratt, Anthony L. Continued fraction expansions for the complete, incomplete, and relativistic plasma dispersion functions. 85e:83053

Ukhanakaya, D. V. A representation of polynomial matrices in the form of a matrix continued fraction. (Russian) (Not in MR)

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Padé, Henri. See Padé, H., 85k:01055

Biography:

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#### 40A25 Approximation to limiting values (summation of series, etc.) (For the Euler-Maclaurin summation formula, see 65B15.)

secondary classifications (40A25)

Delahaye, J.-P. Algorithmes pour extraire une sous-suite convergente d'une suite non convergente. [Algorithms for extracting a convergent subsequence from a divergent sequence] 85f:90094

Foster, D. M. E. (with Phillips, G. M.) The arithmetic-harmonic mean. 85j:40008

Phillips, G. M. See Foster, D. M. E., 85j:40008

Smith, A. C. One-parameter Jacobi transformations of sequences. 85j:40011

#### 40A30 Convergence and divergence of series and sequences of functions

secondary classifications (40A30)

Chobanyan, S. A. The set of sums of a conditionally converging series in a Banach space. (Russian. English and Georgian summaries) 85a:46010

Gogoladze, L. D. Boundedness of converging means of multiple function series. (Russian) 85j:40009

Hetman, Boleslaw (with Jasiek, Bronislaw) A theorem on subseries of real series. (Russian summary) 85k:40001

Jasiek, Bronislaw. See Hetman, Boleslaw, 85k:40001

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#### 40A99 None of the above, but in this section

Bresinski, Claude. On the successive remainders of the exponential series. 85e:40002

Foster, D. M. E. (with Phillips, G. M.) The arithmetic-harmonic mean. 85j:40008

Korolov, P. A. The Riemann theorem in function spaces. (Russian) 85h:40004

Mikh, A. D. (with Syavavko, M. S.) Convergence of integral operator fractions with variable limits of integration. (Russian) (Not in MR)

Odnovolova, T. N. Estimate of the error in calculation of a class of integral continued fractions. (Russian) (Not in MR)

Phillips, G. M. See Foster, D. M. E., 85j:40008

Syavavko, M. S. Tests for convergence of limit-periodic operator integral continued fractions. (Russian) (Not in MR)

See also Mikh, A. D., (Not in MR)

Toader, Gh. A hierarchy of convexity for sequences. 85e:40004

Trublich, N. M. A sufficient test for convergence of periodic integral continued fractions. (Russian) (Not in MR)

secondary classifications (40A99)

Kresová, Helena (with Šalát, Tibor) On palindromic numbers. (Russian and Slovak summaries) 85g:11016

Šalát, Tibor. See Kresová, Helena, 85g:11016

Toader, Gh.  $\alpha$ -convex sequences. (See 85g:00019)

Weisman, Yitzhak. An improved analytical approximation to  $n!$ . 85a:41044

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#### 40B05 Multiple sequences and series (should also be assigned at least one other classification number in this section)

Gogoladze, L. D. Boundedness of converging means of multiple function series. (Russian) 85j:40009

Márics, Ferenc. Generalization of two theorems of Kronecker and of Knopp for multiple numerical series. 85g:40002

Tu, Tian Liang.  $C_{(\alpha, \beta)}$  summation of double series. (Chinese) 85h:40005

secondary classifications (40B05)

Rabeta, E. V. The transformation of classes of double sequences. (Russian) 85g:40004

#### 40Cxx General summability methods

##### 40C05 Matrix methods

Beekmann, W. (with Chang, Shao Chien) An example in summability. 85e:40005

Chang, Shao Chien. See Beekmann, W., 85e:40005

Davydov, N. A. (A,  $\varphi$ )-method of summation of series. (Russian) 85k:40003

Dawson, David F. Absolute summability properties of certain triangular matrices. (Serbo-Croatian summary) 85f:40004

Essa, M. Mohamed. See Sirajudeen, S. M., 85d:40003

Keagy, T. A. Summability of alterations based on stretchings of sequences. 85j:40010

Khapugin, S. P. A sufficient condition for the defining set for a summation method given by a regular  $M$ -matrix. (Russian) 85b:40001

Leiger, Toivo. Abschnittspositive Matrizen und Positivitätsfaktoren in der Limitierungstheorie. (English summary) [Section-positive matrices and positivity factors in summability theory] 85k:40004

Loone, L. The ergodic class of Petersen's summability methods. (Russian. English summary) 85b:40002

Luh, W. (with Trautner, R.) On the rareness of summability methods which are effective for power series. 85h:40006

Malkowsky, Eberhard. Toeplitz-Kriterien für Matrizenklassen bei Räumen absolut limitierbarer Folgen. [Toeplitz criteria for matrix classes in spaces of absolutely limitable sequences] 85e:40006

Mursaleen, A. Note on infinite matrices and generalized almost convergence. 85g:40003

Pallas, L. ( $I^p, I'$ )-summability in a space of measurable functions. (Russian. English summary) 85k:40005

Petersen, G. M. Pairs of matrices and unbounded sequences. 85d:40002

Rabeta, E. V. The transformation of classes of double sequences. (Russian) 85g:40004

Sirajudeen, S. M. (with Essa, M. Mohamed) Matrix transformations of  $l(p)$  and by into  $\chi$ . 85d:40003

Smith, A. C. One-parameter Jacobi transformations of sequences. 85j:40011

Trautner, R. See Luh, W., 85h:40006

secondary classifications (40C05)

Nurcombe, J. R. A note on the strong regularity of Nörlund means. 85h:40008

Soomer, V. Sequential methods of strong summability. (Russian. English summary) 85h:40010

Stadtmüller, Ulrich. A note on the law of iterated logarithm for weighted sums of random variables. 85d:60064

Tammerd, I. Tauberian theorems with a remainder term of Boas-Kangro type. (Russian. English summary) 85j:40017

Yoshimoto, T. A note on the ergodic theorem. 85f:47011

##### 40C10 Integral methods

Repnikov, V. D. The relation between two types of limit integral means of functions of the class  $T_p(R_n)$ . (Russian) 85c:40003

secondary classifications (40C10)

Borwein, David (with Roberts, Ken) On summability factors for the strong Cesàro method for integrals. 85c:40005

Forrester, P. J. Extensions of several summation formulae of Ramanujan using the calculus of residues. **85i:40004**

Roberts, Ken See Borwein, David, **85c:40005**

#### 40C15 Function-theoretic methods (including power series methods and semicontinuous methods)

Ahmad, Z. U. (with Varshney, K. C.) Tauberian theorems for  $|J, p_n|$ -summability. **85m:40002**

Forrester, P. J. Extensions of several summation formulae of Ramanujan using the calculus of residues. **85i:40004**

Huo, Shou Cheng Application of entire functions to the summation of series. (Chinese) **85a:40001**

Varshney, K. C. See Ahmad, Z. U., **85m:40002**

secondary classifications (40C15)

Faustich, K. (with Luh, W.) Summability of power series on prescribed sets by regular Riesz methods. **85h:30003**

Luh, W. See Faustich, K., **85h:30003**

#### 40Dxx Direct theorems on summability

##### 40D05 General theorems

Chen, Quan De See Shi, Xian Liang, (Not in MR)

Kholshchevnikova, N. N. Undecidability of several questions of convergence of series and sequences. (Russian) **85j:40012**

Shi, Xian Liang (with Chen, Quan De) On a theorem of S. R. Sinha and K. Prasad. (Chinese) (Not in MR)

Tripathy, B. K. On the translative and total translative of regular matrices. **85c:40004**

secondary classifications (40D05)

Baron, S. Absolute summability factors in a sequence. **85d:40004**

Davydov, N. A. A property and a theorem of Tauberian type for conservative matrices. (Russian) **85c:40006**

##### 40D10 Tauberian constants and oscillation limits

secondary classifications (40D10)

Rangachari, M. S. A general high-indices theorem. **85j:40016**

##### 40D15 Convergence factors and summability factors

Baron, S. Absolute summability factors in a sequence. **85d:40004**

Borwein, David (with Roberts, Ken) On summability factors for the strong Cesàro method for integrals. **85c:40005**

Roberts, Ken See Borwein, David, **85c:40005**

##### 40D20 Summability and bounded fields of methods

Davydov, N. A. (with Lototskii, V.; Mikhailin, G. A.) Regular positive boundedly inefficient matrix methods of summation. (Russian) **85b:40003**

Lototskii, V. See Davydov, N. A.; et al., **85b:40003**

Mikhailin, G. A. See Davydov, N. A.; et al., **85b:40003**

secondary classifications (40D20)

Davydov, N. A.  $K$ -matrices that are nonsumming divergent series with terms that vanish. (Russian) **85c:40001**

Petersen, G. M. Pairs of matrices and unbounded sequences. **85d:40002**

##### 40D25 Inclusion and equivalence theorems

Diamond, Harvey (with Kuttner, B.; Raphael, Louise A.) Inclusion theorems for the absolute summability of divergent integrals. **85j:40013**

Khandualo, D. Inclusion theorems for the method  $(N, p, q)$ . **85i:40005**

Kuttner, B. See Diamond, Harvey; et al., **85j:40013**

Raphael, Louise A. See Diamond, Harvey; et al., **85j:40013**

Türnpü, H. Inclusion of summability methods in the class of functional series. **85i:40006**

Ziza, O. A. Comparison of methods of Euler summation  $\sum_{n=0}^{\infty} q^n$  and  $\sum_{n=0}^{\infty} E_n q^n$  on a class of orthogonal series. (Russian) **85c:40006**

secondary classifications (40D25)

Ahmad, Z. U. (with Varshney, K. C.) Tauberian theorems for  $|J, p_n|$ -summability. **85m:40002**

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Aljančić, S. Mercerian theorems for weighted means. **85m:40003**

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Beekmann, W. (with Chang, Shao Chien) An example in summability. **85e:40005**

Chang, Shao Chien See Beekmann, W., **85e:40005**

#### 40Exx Inversion theorems

##### 40E05 Tauberian theorems, general

Bingham, N. H. (with Goldie, C. M.) On one-sided Tauberian conditions. **85m:40004**

Chelidze, E. V. A Tauberian theorem for double integrals. (Russian. English and Georgian summaries) **85i:40007**

Davydov, N. A. A property and a theorem of Tauberian type for conservative matrices. (Russian) **85c:40006**

Goldie, C. M. See Bingham, N. H., **85m:40004**

Jakimovski, A. (with Tietz, Hubert) Erratum: "Regularly varying functions and power series methods" [J. Math. Anal. Appl. **73** (1980), no. 1, 65-84; MR **81b:40011**]. **85a:40002**

Keagy, T. A. On "Tauberian theorems via block-dominated matrices". **85g:40005**

Krishnan, V. K. Gap Tauberian theorem for generalized Borel summability. **85e:40007**

Kuttner, B. (with Rajagopal, C. T.; Rangachari, M. S.) Tauberian convergence theorems for summability methods of the Karamata family. **85j:40014**

Meñik, V. I. Tauberian theorems with a remainder for Riesz and Cesàro means. (Russian) **85j:40015**

Mittal, M. L. A Tauberian theorem on strong Nörlund summability. **85i:40008**

Parameswaran, Mangalam R. Tauberian theorems for product methods. I. **85f:40005**

Rajagopal, C. T. See Kuttner, B.; et al., **85j:40014**

Rangachari, M. S. A general high-indices theorem. **85j:40016**

See also Kuttner, B.; et al., **85j:40014**

Sarvothaman, K. A gap Tauberian theorem for generalised absolute Abel summability. **85f:40006**

Slepenchuk, K. M. A theorem of Tauberian type for matrix methods of summation of series. (Russian) **85h:40007**

Tammeraid, I. Tauberian theorems with a remainder term of Boas-Kangro type. (Russian. English summary) **85j:40017**

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Ahmad, Z. U. (with Varshney, K. C.) Tauberian theorems for  $|J, p_n|$ -summability. **85m:40002**

Bingham, N. H. On Borel and Euler summability. **85k:40010**

Gripenberg, Gustaf Two Tauberian theorems for nonconvolution Volterra integral operators. **85a:45005**

Kuttner, B. (with Parameswaran, Mangalam R.) Summability functions for regular Hausdorff methods. **85j:40023**

Luther, Wolfram Abelian and Tauberian theorems for a class of integral transforms. **85g:44004**

Parameswaran, Mangalam R. See Kuttner, B., **85j:40023**

Samal, M. On Nevanlinna's method of summation. **85m:40005**

Shkalikov, A. A. Tauberian type theorems on the distribution of zeros of holomorphic functions. (Russian) **85b:30044**

Slepenchuk, K. M. Invertibility conditions in the theory of strong summability of series in powers of  $p$ . (Russian) **85j:40026**

Tammeraid, I. Tauberian theorems with a remainder term of Boas-Kangro type. (Russian. English summary) **85j:40017**

Varshney, K. C. See Ahmad, Z. U., **85m:40002**

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Kumari, Savita See Singhal, J. P., **85j:40018**

Singhal, J. P. (with Kumari, Savita) On a new series transform and its convolution. **85j:40018**

Yakymiv, A. L. Multidimensional Tauberian theorems of Karamata, Keldysh and Littlewood type. (Russian) **85a:40003**

secondary classifications (40E99)

Jakimovski, A. (with Russell, D. C.) An extension of Wiener's closure and Tauberian theorems. **85k:42032**

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#### 40F05 Absolute and strong summability

Aggarwal, Anandita See Kumar, Ashok, **85i:40009**

Bor, Hüseyin On  $|N, p_n|_k$  summability factors of infinite series. (Arabic summary) **85g:40006**

The absolute summability factors of infinite series. **85k:40007**

Kumar, Ashok (with Aggarwal, Anandita) Multiplication theorems for generalised strong Nörlund summability. **85i:40009**

Mursaleen, Matrix transformations between some new sequence spaces. **85i:40010**

Nurcombe, J. R. A note on the strong regularity of Nörlund means. **85h:40008**

Polovina, N. T. Absolute summability in degree  $p \geq 1$  of the sequence  $\{S_k(x, y)/(k+1)^{(t+1)}\}$ . (Russian) **85h:40009**

Ray, Brajakhore (with Samal, M.) Application of the absolute  $N_q$ -method to some series and integrals. **85j:40019**

Samal, M. On Nevanlinna's method of summation. **85m:40005**

See also Ray, Brajakhore, **85j:40019**

Singh, J. S. See Tripathi, L. M., **85k:40008**

Soomer, V. Sequential methods of strong summability. (Russian. English summary) **85b:40010**

Tripathi, L. M. (with Singh, J. S.) On the strong matrix summability of ultra-spherical series. **85k:40008**

secondary classifications (40F05)

Ahmad, Z. U. (with Varshney, K. C.) Tauberian theorems for  $|J, p_n|$ -summability. **85m:40002**



- Chandra, Prem A theorem on the absolute Riesz summability of a Fourier series at a point. 85a:42013
- Dawson, David F. Absolute summability properties of certain triangular matrices. (Serbo-Croatian summary) 85f:40004
- Diamond, Harvey (with Kuttner, B.; Raphael, Louise A.) Inclusion theorems for the absolute summability of divergent integrals. 85j:40013
- Kumar, Ashok On functional methods. II. 85j:40022
- Kuttner, B. See Diamond, Harvey; et al., 85j:40013
- Mursaleen A note on infinite matrices and generalized almost convergence. 85g:40003
- Novikova, N. S. Absolute summability with a power of orthogonal series by the Voronoi-Nörlund method. (Russian) 85f:42049
- Okuyama, Yasuo ★ Absolute summability of Fourier series and orthogonal series. 85k:42021
- Raphael, Louise A. See Diamond, Harvey; et al., 85j:40013
- Sarvothaman, K. A gap Tauberian theorem for generalised absolute Abel summability. 85f:40006
- Schwinn, H. Convergence relations of subsequences of general orthogonal series and Euler summability. 85j:42057
- Varshney, K. C. See Ahmad, Z. U., 85m:40002
- Zia, O. A. Comparison of methods of Euler summation  $(E, q)$  and  $[E, q]$  on a class of orthogonal series. (Russian) 85k:40006

#### 40Gxx Special methods of summability

##### 40G05 Cesàro, Euler, Nörlund and Hausdorff methods

- Al-Madi, Asmi K. On translitivity of the product of Nörlund summability methods. 85k:40009
- Bingham, N. H. On Borel and Euler summability. 85k:40010
- Borwein, David (with Cass, F. P.) Nörlund matrices as bounded operators on  $l_p$ . 85j:40020
- Cass, F. P. See Borwein, David, 85j:40020
- Chandrasekhara Rao, K. (with Gurusingham, A. Alfred) On Hausdorff summation methods. 85j:40021
- Gurusingham, A. Alfred See Chandrasekhara Rao, K., 85j:40021
- Jakimovski, A. (with Russell, D. C.) Mercerian theorems involving Cesàro means of positive order. 85i:40011
- Kumar, Ashok On functional methods. II. 85j:40022
- Kuttner, B. (with Parameswaran, Mangalam R.) Summability functions for regular Hausdorff methods. 85j:40023
- Lorch, Lee The Lebesgue constants for Euler  $(E, 1)$  summation of Laplace series. 85i:40012
- Mohapatra, Premalata Summability factors for generalised quasi-Nörlund means. 85b:40004
- Parameswaran, Mangalam R. See Kuttner, B., 85j:40023
- Rhoades, B. E. Using inclusion theorems to establish the summability of orthogonal series. (See 85m:41002)
- Rudman, L. M. Conditions for nonemptiness of the domain of  $(C, 1)$ -sums of series with real terms. (Russian) 85f:40007
- Russell, D. C. See Jakimovski, A., 85i:40011
- Singh, J. S. See Tripathi, L. M., 85j:40024
- Tripathi, L. M. (with Singh, J. S.) On the  $(N, p_n)$  summability of Legendre series. 85j:40024

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- Aggarwal, Anandita See Kumar, Ashok, 85i:40009
- Alpér, L. Cesàro summability and conformal mapping. 85h:30008
- Bekbaev, U. D. Semigroups of symmetries of Nörlund convergence. (Russian) 85b:40011
- Bor, Hüseyin The absolute summability factors of infinite series. 85k:40007
- Borwein, David (with Roberts, Ken) On summability factors for the strong Cesàro method for integrals. 85c:40005
- Generalized Hausdorff matrices as bounded operators on  $\mathbb{P}$ . 85b:47005
- DeFranza, J. (with Fleming, D. J.) Nörlund polynomial methods on BK spaces. 85j:40027
- (with Fleming, D. J.) Nörlund polynomial methods of type  $M(E)$ . 85j:40028
- Fleming, D. J. See DeFranza, J., 85j:40027 and 85j:40028
- Jadva, B. L. On the Nörlund summability of Laguerre series. 85c:42030
- Khandualo, D. Inclusion theorems for the method  $(N, p, q)$ . 85i:40005
- Kumar, Ashok (with Aggarwal, Anandita) Multiplication theorems for generalised strong Nörlund summability. 85i:40009
- Leindler, L. On the absolute Riesz summability of orthogonal series. 85k:42055
- Mittal, M. L. A Tauberian theorem on strong Nörlund summability. 85i:40006
- Niethammer, W. (with Varga, R. S.) The analysis of  $k$ -step iterative methods for linear systems from summability theory. 85a:65059
- Novikova, N. S. Absolute summability with a power of orthogonal series by the Voronoi-Nörlund method. (Russian) 85f:42049
- Roberts, Ken See Borwein, David, 85c:40005
- Sulaiman, W. T. On the absolute Cesàro summability of ultraspherical series. (Arabic summary) 85a:42038
- On absolute Cesàro summability of Laplace series. 85j:42053
- Ssaly, I. On the absolute Cesàro summability of Fourier series. 85k:42022
- Tammerald, I. Tauberian theorems with a remainder term of Boas-Kangro type. (Russian. English summary) 85j:40017
- Varga, R. S. See Niethammer, W., 85a:65059

##### 40G10 Abel, Borel and power series methods

- Akita, Minoru (with Kano, Takeshi) On the Borel summability of  $\sum_{n=1}^{\infty} n^{-\alpha} \exp(in^2 \theta)$ . 85d:40005
- Boichev, Georgi S. Borel-summability of Jacobi series in their boundary region of convergence. (Bulgarian. English summary) 85g:40007
- Ganapathy, M. K. A note on  $(B, \alpha, \beta)$  summability. 85i:40013
- Kano, Takeshi See Akita, Minoru, 85d:40005
- Neamtu, N. N. The Laplace-Dirichlet transformation and its basic properties. (Romanian summary) 85j:40025a
- The application of Laplace-Dirichlet transform in the summation of series. (Romanian summary) 85j:40025b

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- Bingham, N. H. On Borel and Euler summability. 85k:40010
- Gawędski, K. (with Kupiainen, Antti; Tirozzi, B.) Borel summability of the perturbation series in a hierarchical  $\lambda(\nabla\Phi)^4$  model. 85m:81110
- Khatoun, N. See Wañ, A., 85b:42003
- Kil'berg, E. M. (with Postina, V. S.) Application of Borel's integral method of summation to a series connected with a Fourier series. (Russian) 85h:42007
- Krishnan, V. K. Gap Tauberian theorem for generalised Borel summability. 85e:40007
- Kupiainen, Antti See Gawędski, K.; et al., 85m:81110
- Postina, V. S. See Kil'berg, E. M., 85h:42007
- Sarvothaman, K. A gap Tauberian theorem for generalised absolute Abel summability. 85f:40006
- Šlaković, Semiha D-summability of derived multiple Fourier series. (Serbo-Croatian. English summary) 85j:42040
- Tirozzi, B. See Gawędski, K.; et al., 85m:81110
- Wañ, A. (with Khatoun, N.) On the approximation of function by Borel matrix. 85b:42003

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- Maidanyuk, T. I. See Slepchuk, K. M., 85i:40014
- Miller, J. F. (with Skerry, H. B.) Regular and Mercerian generalized Lototsky method. 85b:40005
- Pandey, G. S. Multipliers for  $|C, 1|$  summability of Jacobi series. 85g:40008
- Skerry, H. B. See Miller, J. F., 85b:40005
- Slepchuk, K. M. (with Maidanyuk, T. I.) Linear transformations of double series converging absolutely in degree  $p$ . (Russian) 85i:40014
- Invertibility conditions in the theory of strong summability of series in powers of  $p$ . (Russian) 85j:40026

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- Arteca, Gustavo A. (with Fernández, Francisco M.; Castro, Eduardo A.) A new method for summation of divergent power series. 85m:81043
- Boichev, Georgi S. Convergence and  $(C, \delta)$ -summability of series in Jacobi polynomials at points of boundaries of domains of convergence. (Russian) 85g:42027
- Byrnes, J. S. (with Giroux, A.; Shisha, Oved) Riemann sums and improper integrals of step functions related to the prime number theorem. 85f:40002
- Castro, Eduardo A. See Arteca, Gustavo A.; et al., 85m:81043
- Chandra, Prem A theorem on the absolute Riesz summability of a Fourier series at a point. 85a:42013
- Fernández, Francisco M. See Arteca, Gustavo A.; et al., 85m:81043
- Gafarov, A. See Israllova, M. M., 85a:42018
- Giroux, A. See Byrnes, J. S.; et al., 85f:40002
- Israllova, M. M. (with Gafarov, A.) The summation rate by the Riesz method of differentiated multiple conjugated trigonometric series of some classes of functions. (Russian. Tajiki summary) 85a:42018
- Kon, Mark A. (with Raphael, Louise A.) New multiplier methods for summing classical eigenfunction expansions. 85b:34029
- Raphael, Louise A. See Kon, Mark A., 85b:34029
- Shawyer, Bruce L. R. (with Tomm, Ludwig) Analytic continuation of power series by regular generalized weighted means. 85c:30005
- Shisha, Oved See Byrnes, J. S.; et al., 85f:40002
- Šlaković, Semiha Absolute  $D$ -summability of multiple Fourier series. (Serbo-Croatian. English summary) 85a:42019
- Tomm, Ludwig See Shawyer, Bruce L. R., 85c:30005
- Tripathy, B. K. On the translitivity and total translitivity of regular matrices. 85c:40004

##### 40H05 Functional analytic methods in summability

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## 41A25 Rate of convergence, degree of approximation

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- Ries, S. (with Stens, R. L.) A unified approach to fundamental theorems of approximation by sequences of linear operators and their dual versions. 85j:41039
- Savič, Vladimír N. Genaue Bewertung der Approximationsfunktion aus der Klasse  $\tilde{H}_{A_1, A_2, A_3}^{1,1,1}$  durch die Favardsummen. [Sharp estimation of the approximation function from the class  $\tilde{H}_{A_1, A_2, A_3}^{1,1,1}$  in terms of the Favard sums] 85j:41040a  
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- Saxena, R. B. Error bounds in the approximation of functions. 85a:41023
- Sharapudinov, I. I. On the best approximation and polynomials of the least quadratic deviation. (Russian summary) 85d:41017
- Shisha, Oved See Lapidot, Eitan, 85c:41030
- Singh, Tiham Degree of approximation by Nörlund operators of Fourier-Jacobi expansions. 85c:41032
- Stens, R. L. See Ries, S., 85j:41039
- Tashev, S. P. New estimates for the Hausdorff and local approximations of functions. 85c:41021
- Trefethen, Lloyd N. (with Gutknecht, M. H.) Real vs. complex rational Chebyshev approximation on an interval. 85b:41045
- Umar, S. See Khan, Arman, 85h:41044
- Wang, Si Lei On the degree of approximation by Hermite-Fejér interpolation polynomials. (Chinese) (Not in MR)
- Wood, B. Uniform approximation by linear combinations of Bernstein-type polynomials. 85b:41015

## secondary classifications (41A25)

- Andreev, Andrei St. (with Popov, Vasil Atanasov) Approximation of functions by means of linear summation operators in  $L_p$ . 85h:41058
- Besov, O. V. Estimates of  $L_p$ -moduli of continuity and imbedding theorems for a domain with the flexible horn condition. (Russian) 85j:40046
- Bojanic, R. (with Cheng, Fu Hua) Estimates for the rate of approximation of functions of bounded variation by Hermite-Fejér polynomials. 85c:41001
- Cao, Jia Ding Operators of Kantorovich type and integral Schoenberg splines. (Russian) 85k:41036
- Cheng, Fu Hua See Bojanic, R., 85c:41001
- Ditsian, Z. Moduli of continuity in  $\mathbb{R}^n$  and  $D \subset \mathbb{R}^n$ . 85c:28007
- Eneadunay, Sylvanus A. N. On the modified Hermite interpolation polynomials. 85c:41006
- Ilev, G. (with Opitz, U.) Comonotone approximation of  $|x|$  by rational functions. 85k:41022  
(with Opitz, U.) Comonotone approximation of  $|x|$  by rational functions. 85k:41023
- Khatamov, A. On approximation of convex functions by rational ones in integral metrics. (Russian summary) 85h:41039

Khatamov, N. See Wall, A., 85b:42003

- Korneichuk, N. P. Approximation by parabolic splines of differentiable functions and their derivatives. (Russian) 85m:41020
- Kostov, V. At. Approximation of nonnegative convex functions by polynomials with positive coefficients in the Hausdorff metric. 85k:41009
- Lehnhoff, Heinz-Gerd A new proof of Teljakowski's theorem. 85a:41003
- Lubinsky, D. S. On convergence of rational and best rational approximations. 85c:30041
- Lupas, Luciana A class of Jackson-type operators. 85i:41023
- Misra, N. A generalization of the Freud-Sharma operators. 85c:41014  
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- Móricz, Ferenc Approximation by partial sums and Cesàro means of multiple orthogonal series. 85b:42014  
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- Nishishiraho, Toshihiko Convergence of positive linear approximation processes. 85b:41024
- Onnewaer, C. W. Saturation results for operators defining fractional derivatives on local fields. 85j:41046
- Opitz, U. See Ilev, G., 85k:41022 and 85k:41023
- Popov, Vasil Atanasov See Andreev, Andrei St., 85h:41058
- Potapov, M. Approximation by algebraic polynomials in the uniform metric. (Russian) 85g:41017
- Qureshi, K. On the degree of approximation of function belonging to the class  $Lip(\alpha, p)$  by almost Riesz means of its conjugate series. 85k:42006
- Saxena, R. B. (with Misra, N.) Error bounds for the rate of convergence of averaging-Hermite-Fejér and averaging-Egerváry-Turán interpolators. 85k:41002
- Sendov, Bl. A modified Steklov function. (Russian) 85c:41034
- Sikhema, P. C. Approximation with convolution operators depending on two parameters. 85i:41019  
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- Singh, Surend P. On Baskakov-type operators. 85a:41028  
On the degree of approximation by Baskakov-type operators. 85g:41030
- Starovoltov, A. P. Rational approximation of functions having a derivative of bounded variation. (Russian. English summary) 85d:41013
- Stens, R. L. Characterization of best algebraic approximation by weighted moduli of continuity. 85m:41015
- Sun, Xie Hua On a theorem of Goodenough and Mills. (Chinese. English summary) 85j:41008
- Seil, L. An interpolation process on the roots of the integrated Legendre polynomials. (Russian summary) 85h:41011
- Wall, A. (with Khatamov, N.) On the approximation of function by Borel matrix. 85b:42003
- Werschulz, Arthur G. Measuring uncertainty without a norm. 85k:41048
- Xie, Dun Li The order of  $L^p$  approximation by Kantorovich polynomials. (Chinese) (Not in MR)
- Xu, Shi Ying Degree of approximation by interpolatory cubic splines. (Chinese. English summary) 85g:41021

## 41A27 Inverse theorems

- Totik, V. Approximation in  $L^1$  by Kantorovich polynomials. 85k:41028

## secondary classifications (41A27)

- Kovachik, O. A necessary condition for imbedding  $H_p^\omega$  into a space of functions of bounded variation. (Russian) 85j:46043
- Shabosov, M. Sh. The problem of reconstruction of linear functionals from information given in the form of boundary conditions. (Russian. Tajiki summary) 85d:41002
- Totik, V. Uniform approximation by Baskakov and Meyer-König and Zeller operators. 85c:41038
- Vellkin, V. L. Sharp error estimates for some optimal methods of reconstructing differentiable periodic functions. (Russian) 85e:41006
- 41A28 Simultaneous approximation
- de Bruin, Marcel G. Some convergence results in simultaneous rational approximation to the set of hypergeometric functions  $\{ {}_1F_1(1; c; z) \}_{c=1}^n$ . 85m:41028
- Gonaka, Heins H. Quantitative Korovkin type theorems on simultaneous approximation. 85k:41029
- Narang, T. D. On best simultaneous approximation. 85a:41024
- Shi, Ying Guang On simultaneous best  $L_1$  approximations in  $C[-1, 1]$ . 85i:41016
- Yang, Yi Qun The  $K$  functional and approximation degrees. I. (Chinese) 85k:41030a  
The  $K$  functional and approximation degrees. II. (Chinese) 85k:41030b

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- Pevac, Lasar On approximation in normed spaces. 85k:41046
- Privalov, A. A. Simultaneous interpolation and approximation of continuous functions. (Russian) 85k:42007
- Shi, Ying Guang Uniqueness of minimization problems. 85i:41037
- 41A29 Approximation with constraints
- Atačik, Şermin Piecewise monotone interpolation and approximation with generalized polynomials. (Turkish summary) 85g:41027
- Chalmers, B. L. (with Kaufman, E. H., Jr.; Leeming, D. J.; Taylor, G. D.) Uniform reciprocal approximation subject to linear constraints. 85h:41046
- Daugavet, V. A. (with Palyaeva, V. N.) The linearization method for problems of approximation with linear constraints. (Russian) 85k:41031
- Dunham, Charles B. The limit of approximation with weights large on nodes. 85b:41028  
Nearby linear Chebyshev approximation under constraints. 85j:41041
- Kaufman, E. H., Jr. See Chalmers, B. L.; et al., 85h:41046
- Leeming, D. J. See Chalmers, B. L.; et al., 85h:41046



- Palyaeva, V. N. See Daugavet, V. A., 85b:41031  
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 Taylor, G. D. See Chalmers, B. L.; et al., 85b:41046  
 Wong, Wing Hung On constrained multivariate splines and their approximations. 85d:41018

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- Boyanov, Borislav D. A generalization of Chebyshev polynomials. II. 85b:41003  
 Brannigan, M.  $H$ -sets for nonlinear constrained approximation. (See 85m:41002)  
 Dunham, Charles B. Rational Chebyshev approximation with Hermite interpolation at zero. 85b:41025  
 von Goltschek, M. A short proof of Müntz's theorem. 85b:41005  
 Iliev, G. (with Opitz, U.) Comonotone approximation of  $|x|$  by rational functions. 85k:41022  
 (with Opitz, U.) Comonotone approximation of  $|x|$  by rational functions. 85k:41023  
 Luquin Martínez, Francisco Optimal bound of an approximation in  $L_p$  space by means of polynomials with integer coefficients. (Spanish. English summary) 85j:41014  
 Opitz, U. See Iliev, G., 85k:41022 and 85k:41023

## 41A30 Approximation by other special function classes

- Aksenov, V. V. Approximation by functions of exponential type in certain weighted metrics. (Russian) 85m:41030  
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 Borwein, Peter B. Uniform approximation by polynomials with variable exponents. 85c:41022  
 Bushev, D. N. On the approximation of functions of class  $H^{1,1}$  by the Favard method. (Russian. English summary) 85g:41028  
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- Atačik, Şermin Piecewise monotone interpolation and approximation with generalized polynomials. (Turkish summary) 85g:41027  
 Badkov, V. M. Estimations for the Lebesgue function and the remainder of the Fourier series with respect to orthogonal polynomials. 85b:42035  
 Bogovskii, M. E. See Maslennikova, V. N., 85j:46052  
 Bolvin, André On Carleman approximation by meromorphic functions. 85k:30057  
 Butzer, P. L. (with Stens, R. L.) The Poisson summation formula, Whittaker's cardinal series and approximate integration. 85g:94008  
 Dervis, A. O. (with Khavin, V. P.) Free interpolation and the Dirichlet problem. (Russian. English summary) 85j:31002  
 Dianat, Soheil A. See Sarkar, Tapan K.; et al., 85b:65015  
 Gauthier, P. M. Carleman approximation on unbounded sets by harmonic functions with Newtonian singularities. 85j:31003  
 Gori, Laura Nicolò-Amati Approximations in an  $L^2$  space with linear combinations of a predetermined number of given functions. (Italian) 85k:42006  
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 Lisorkin, P. I. (with Nikol'skii, S. M.) A theorem concerning approximation on the sphere. (Russian summary) 85d:41008  
 (with Nikol'skii, S. M.) Approximation on the sphere in the metric of continuous functions. (Russian) 85d:41009  
 Maslennikova, V. N. (with Bogovskii, M. E.) Approximation of potential and solenoidal vector fields. (Russian) 85j:46052  
 Móricz, Ferenc On the approximation by multiple orthogonal series. 85g:42031  
 Neuman, František Functions of the form  $\sum_{i=1}^N f_i(x)g_i(t)$  in  $L_2$ . 85a:26025

- Nikol'skii, S. M. See Lisorkin, P. I., 85d:41008 and 85d:41009  
 Osolkov, K. I. On exponential polynomials of the least  $L^p$ -norm. 85a:41022  
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 Rubel, Lee A. A universal differential equation. (Czech) 85c:34019  
 Sarkar, Tapan K. (with Weiner, Donald K.; Jain, Vijay K.; Dianat, Soheil A.) Approximation by a sum of complex exponentials utilizing the pencil of function method. 85b:65015  
 Shaginyan, A. A. Tangential harmonic and gradient approximation. (Russian. Armenian summary) 85b:31005  
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 Wildenhain, Günther Approximation by solutions of elliptic boundary value problems of higher order equations. (See 85c:00011)  
 Eine Bemerkung zur gleichmäßigen Approximation durch Lösungen elliptischer Gleichungen. [A remark on uniform approximation by solutions of elliptic equations] 85c:31007  
 Yadav, Sarjoo Prasad Approximation of Fourier-Laguerre expansion by its Cesàro mean in certain Banach spaces. 85g:42030

## 41A35 Approximation by operators (in particular, by integral operators)

- Alkemade, J. A. H. Generalized Baskakov operators. (See 85g:41002)  
 Truncated Szász-Mirakjan operators and a set of new operators. 85b:41048  
 Approximation with generalized Baskakov operators in weighted function spaces. 85i:41018  
 Arestov, V. V. Approximation of invariant operators. (Russian) 85b:41030  
 Baskakov, A. V. Some best constants of approximation of continuous functions by singular integrals. (Russian) 85d:41019  
 Bogner, Antal On universal elements of series of linear operators. (Hungarian) 85b:41049  
 Davidchik, A. N. Approximations of continuous periodic functions by linear positive methods of convolution type. (Russian) 85f:41019  
 Haf, H. Stetigkeitsmodul und Lipschitzklassen in  $L_p$ -Distributionenräumen. [Moduli of continuity and Lipschitz classes in  $L_p$ -distribution spaces] 85m:41035  
 Huang, Guo Zhu On the degree of approximation of Fejér operators. (Chinese. English summary) 85k:41035  
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 Sakai, Hyosi Saturation and inverse theorems for certain operators in  $C$  or  $L_p$ ,  $1 \leq p < \infty$ . 85f:41020  
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 Tidjane Diallo, A. A property of the Hirschman-Widder and Leviatan operators. 85b:41052  
 Totik, V. Approximation by Szász-Mirakjan-Kantorovich operators in  $L^p$  ( $p > 1$ ). (Russian summary) 85b:41053  
 Ugulava, D. K. Approximation of periodic functions of several variables by Fejér sums. (Russian) 85j:41042  
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 Zhou, Xin Long Approximation of continuous functions by Szász-Mirakjan operators. (Chinese. English summary) 85j:41045

## secondary classifications (41A35)

- Chalmers, B. L. (with Mason, J. C.) Minimal  $L_p$  projections by Fourier, Taylor, and Laurent series. 85j:42020  
 Ibragimov, E. Dzh. (with Radyno, Ya. V.) Approximation of functions on a sphere in metrics  $L_{p,\lambda}(S)$  by integrals of Jackson type. (Russian) 85b:41035  
 Khan, Arman (with Umar, S.) On the order of approximations of generalized Gauss-Weierstrass singular integral. 85b:41044  
 Kornelchuk, N. P. (with Pereverzev, S. V.) On the question of the approximation of functions of two variables by operators constructed on the basis of one-dimensional operators. (Russian) 85j:41038  
 Mason, J. C. See Chalmers, B. L., 85j:42020  
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 Stechkin, S. B. Some new problems of approximation theory. (Russian) (See 84k:41003) (Not in MR)  
 Stens, R. L. See Ries, S., 85j:41039

- Totik, V. Saturation for Bernstein type rational functions. 85i:41029  
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#### 41A36 Approximation by positive operators

- Alhamade, J. A. H. The second moment for the Meyer-König and Zeller operators. 85f:41021  
 Berg, L. On the asymptotic behaviour of positive operators. 85i:41021  
 Cao, Jia Ding Operators of Kantorovich type and integral Schoenberg splines. (Russian) 85k:41036  
 On some equalities for positive linear operators, and  $L^p$ -asymptotic estimates. (Chinese) 85a:41037  
 Operators of Kantorovich type and integral Schoenberg splines. (Russian) 85i:41032  
 Cîrsoaie, Cristina Probability and approximation of unbounded functions. (Romanian summary) (Not in MR)  
 Degani Cattelani, Franca Kernels of "distance" type that soften jumps in one or more variables. (Italian) 85h:41054  
 Fomin, G. A. Approximation of continuous functions by algebraic polynomials of one construction. (Russian) 85k:41037  
 Gonska, Heino H. On approximation in spaces of continuous functions. 85d:41021  
 Grishpun, Z. S. The rate of approximation of a class of linear positive operators to a continuous function. (Russian. Kazakh summary) 85h:41055  
 King, J. P. Probabilistic analysis of Korovkin's theorem. 85g:41029  
 Lachovik, Ivan B. On positivity of linear continuous operators defined on the set of monotonic and continuous functions. (Serbo-Croatian summary) 85h:41056  
 Levin, V. A. Approximation of differentiable functions by positive methods of summation of Fourier series. (Russian) 85b:41033  
 Li, Hong Approximation degree of functions differentiable in unbounded region. 85m:41036  
 Lupap, Luciana A class of Jackson-type operators. 85i:41023  
 Ma, Yu Lin An asymptotic formula for the degree of approximation by quasilocal positive linear operators. (Chinese. English summary) 85h:41057  
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 Volkov, Yu. I. New examples of approximation by linear positive operators. (Russian) 85c:41036  
 Weng, Zu Yin (with Sha, Zhen) Approximation by operators in the spaces  $C^*$  and  $L^*$ . (Chinese. English summary) 85g:41031  
 Yu, Xiang Ming An asymptotic expansion of some positive linear operators. (Chinese) 85d:41023

#### secondary classifications (41A36)

- Bojanic, R. (with Cheng, Fu Hua) Estimates for the rate of approximation of functions of bounded variation by Hermite-Fejér polynomials. 85c:41001  
 Cheng, Fu Hua See Bojanic, R., 85c:41001  
 Costăscu, Christian Prolongement explicite des éléments de  $L^p(\Omega)$  et majoration du module de régularité du prolongement. Applications à la convergence des suites d'opérateurs linéaires positifs. [Explicit extension of the elements of  $L^p(\Omega)$  and upper bounds of the modulus of regularity of the extension. Applications to the convergence of sequences of positive linear operators] 85g:41025  
 Guo, Shun Sheng A note on the local saturation problem. (Chinese. English summary) 85a:41029  
 Stancu, D. D. Approximation of functions by means of a new generalized Bernstein operator. 85j:41015  
 Stark, E. L. The kernel of Fejér-Korovkin: a basic tool in the constructive theory of functions. 85i:42006

#### 41A40 Saturation

- Berdyshev, V. I. On differentiability of the operator of best approximation. 85i:41028  
 Gavrea, I.  $k$ -orthogonal polynomials. II. (Romanian. French summary) 85c:41037  
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 Mohapatra, Ram Narayan (with Russell, D. C.) Some direct and inverse theorems in approximation of functions. 85c:41027  
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 Russell, D. C. See Mohapatra, Ram Narayan, 85c:41027  
 Totik, V. Uniform approximation by Baakov and Meyer-König and Zeller operators. 85c:41038  
 Saturation for Bernstein type rational functions. 85i:41029

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- Kuttner, B. On nonuniqueness of the order of saturation. II. 85k:42005  
 Sakai, Ryosui Saturation and inverse theorems for certain operators in  $C$  or  $L_p$ ,  $1 \leq p < \infty$ . 85f:41020  
 Sha, Zhen See Weng, Zu Yin, 85g:41031  
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#### 41A44 Best constants

- Bartelt, Martin (with Swetits, John) Uniform strong unicity constants for subsets of  $C[a, b]$ . 85k:41038  
 Kunwar, B. Best constants in error estimates for a class of linear positive approximation methods. 85c:41039  
 Swetits, John See Bartelt, Martin, 85k:41038

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- Jetter, K. Gauß-Formeln vom lakunären Typ. [Gauss formulae of lacunary type] 85f:41028

#### 41A45 Approximation by arbitrary linear expressions

- Abel, U. On the uniform approximation to continuous functions by linear aggregates of translations. 85i:41030  
 Andreev, Andrei St. (with Popov, Vasil Atanasov) Approximation of functions by means of linear summation operators in  $L_p$ . 85h:41058  
 Bruno, Vincent J. A Weierstrass approximation theorem for topological vector spaces. 85j:41047  
 Ivanov, M. L. Uniqueness of the best uniform approximation of a function given on a finite set. (Russian) 85d:41024  
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- Kunwar, B. Best constants in error estimates for a class of linear positive approximation methods. 85c:41039  
 Pełaker, Petra An alternant criterion for Haar cones. 85a:41035

#### 41A46 Approximation by arbitrary nonlinear expressions; widths and entropy

- Blambert, Maurice (with Chevalier, Georges) Sur les fonctions de Tchebyscheff au sens de Hille. [On Chebyshev functions in the sense of Hille] 85f:41022  
 Burchard, Hermann G. (with Höllig, Klaus)  $n$ -width of  $H_p$ -classes in  $L_q(-1, 1)$ . 85h:41059  
 Chevalier, Georges See Blambert, Maurice, 85f:41022  
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- Barrar, R. B. (with Loeb, H. L.) Characterizing the divided difference weights for extended complete Tchebycheff systems. (See **85g:41002**)
- Bartelt, Martin (with Schmidt, Darrell) Lipschitz conditions, strong uniqueness, and almost Chebyshev subspaces of  $C(X)$ . **85c:41041**
- Berdyshev, V. I. The metric projection on the class  $H(\Omega)$  satisfies Lipschitz condition. (Russian summary) **85k:41039**
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- Gutknecht, M. H. Algebraically solvable Chebyshev approximation problems. **85h:41066**
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- See also Trefethen, Lloyd N., (**85g:41002**)
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- Strong unicity constants for finite-dimensional subspaces. (See **85g:41002**)
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- Shi, Ying Guang Quasiconvex functions and Chebyshev approximation. (Chinese) (Not in MR)
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- Strodilot, J.-J. (with Nguyen, V. Hien; Heukemes, N.) A note on the Chebyshev  $s$ -approximation problem. **85i:41033**
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- Berdyshev, V. I. On differentiability of the operator of best approximation. **85i:41028**
- Bridges, Douglas S. Recent progress in constructive approximation theory. **85a:03075**
- Brosowski, Bruno (with Guerreiro, Claudia) Conditions for the uniqueness of best generalized rational Chebyshev approximation to differentiable and analytic functions. **85m:41023**
- Chalmers, B. L. (with Kaufman, E. H., Jr.; Leeming, D. J.; Taylor, G. D.) Uniform reciprocal approximation subject to linear constraints. **85h:41046**
- Cheney, E. W. The best approximation of multivariate functions by combinations of univariate ones. **85k:41044**
- Dunham, Charles B. The limit of approximation with weights large on nodes. **85h:41028**
- Ellacott, S. W. On Faber polynomials and Chebyshev polynomials. **85h:30006**
- Fedorov, V. M. Approximation by polynomials on a half-line. (Russian) **85b:41004**
- Giannusi, G. (with Guerra, S.) Representability of a continuous function by generalized polynomials with Chebyshev least deviation from zero. (Italian. English summary) **85h:41080**
- Glinkin, I. A. Best quadrature formula on a class of convex functions. (Russian) **85j:41054**
- Gosselin, R. P. On some nonlinear spaces of approximating functions. **85m:41031**
- Guerra, S. See Giannusi, G., **85h:41080**
- Guerreiro, Claudia See Brosowski, Bruno, **85m:41023**
- Gutknecht, M. H. See Trefethen, Lloyd N., **85g:41024** and **85h:41045**
- Halton, J. (with Light, W. A.) Existence questions in tensor product spaces. **85i:41035**
- Henry, Myron S. (with Swetits, John) Lebesgue constants for certain classes of nodes. **85a:41002**
- Ho, Nai Hung Best approximation by Franklin polynomials. **85g:42028**
- Jothibai, Annel See Rao, Geetha S., **85m:41046**
- Kaufman, E. H., Jr. See Chalmers, B. L.; et al., **85h:41046**
- Kemp, L. Franklin Discrete rational Chebyshev approximation with poles. **85m:41024**
- Leeming, D. J. See Chalmers, B. L.; et al., **85h:41046**
- Leindler, L. On the absolute Riesz summability of orthogonal series. **85k:42055**
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- Macías, Roberto A. (with Zó, F.) Weighted best local  $L^p$  approximation. **85m:41014**
- Mariados, S. A. See Rao, Geetha S., **85i:47065**
- Mason, J. C. Minimal  $L_p$  projections and near-best  $L_p$  approximations. (See **85g:41002**)
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- Prolla, João B. Fixed-point theorems for set-valued mappings and existence of best approximants. **85c:41056**
- Nonexpansive mappings and Chebyshev centers in (AL)-spaces. **85h:41084**
- Rao, Geetha S. (with Mariados, S. A.) Applications of fixed point theorems to best approximations. **85i:47065**
- (with Jothibai, Annel) SAIN in a normed linear space. **85m:41046**
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- Richter-Dyn, Nira Composite Hermite-Birkhoff quadrature formulas of Gaussian type. **85k:41043**
- Sanchez, A. M. (with Arcangeli, R.) Estimations des erreurs de meilleure approximation polynomiale et d'interpolation de Lagrange dans les espaces de Sobolev d'ordre non



- entier. (English summary) [Estimates of the best polynomial approximation errors and the Lagrange interpolation error in fractional-order Sobolev spaces] 85m:55121
- Shi, Ying Guang. On a problem of Rivlin in  $L_p$  ( $1 < p < \infty$ ) approximation. 85i:41002
- On simultaneous best  $L_1$  approximations in  $C[-1, 1]$ . 85i:41010
- Shirolov, N. A. The Jackson-Bernstein theorem and strictly convex domains in  $C^n$ . (Russian) 85m:32012
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- Zajitzek, Ladislav. Differentiability of the distance function and points of multivaluedness of the metric projection in Banach space. 85b:46025
- Zălinescu, C. An algorithm for the best approximation by elements of a polyhedral set in Banach spaces. 85b:41008
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## 41A52 Uniqueness of best approximation

- Blatt, Hans-Peter. On strong uniqueness in linear complex Chebyshev approximation. 85b:41051
- Hausmann, Werner (with Zeller, Karl) Uniqueness and nonuniqueness in bivariate  $L^1$ -approximation. 85b:41074
- Króó, András. On the strong unicity of best Chebyshev approximation of differentiable functions. 85b:41043
- Leban, Milor M. On one property equivalent to the uniqueness of the solution of the Chebyshev's best approximation problem in a normed linear real vector space. (Serbo-Croatian summary) 85b:41063
- Marinov, A. V. Strong uniqueness constants for best uniform approximations on compacta. (Russian) 85c:41044
- Sommer, Manfred. Some results on best  $L_1$ -approximation of continuous functions. 85c:41045
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- Angelos, James (with Schmidt, Darrell) Strong uniqueness in  $L^1(X, \Sigma, \mu)$ . 85m:41039
- Bartelt, Martin (with Schmidt, Darrell) Lipschitz conditions, strong uniqueness, and almost Chebyshev subspaces of  $C(X)$ . 85c:41041
- Bosnyak, Á. P. Some remarks on the farthest point problem. 85m:41046
- Georgiev, P. G. Approximation of convex  $n$ -gons by  $(n-1)$ -gons. (Bulgarian. English summary) 85m:52001
- Henry, Myron S. Lebesgue constants determined by extremal sets. (See 85m:41002)
- (with Swetits, John) Limits of strong unicity constants for certain  $C^\infty$  functions. 85b:41008
- Króó, András. On the unicity of best  $L_1$ -approximation by polynomials of several variables. 85b:41041
- Narang, T. D. On best simultaneous approximation. 85a:41024
- Nürnberg, Günther. Strong unicity constants for spline functions. 85a:41008
- A local version of Haar's theorem in approximation theory. 85a:41034
- Papadopoulos, Susanna. A connected separable metric space with a dispersed Chebyshev set. 85c:41040
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## 41A55 Approximate quadratures

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- Blaga, Petru P. Optimal quadrature formulas of interval type. (Romanian. English summary) 85f:41027
- Engels, Hermann (with Merschen, Bernd Anton) New minimality properties of Gaussian quadratures. 85f:41053
- Gabdulkhaev, B. G. (with Velez, G. D.) Optimal quadrature formulas for singular integrals. (Russian) 85c:41047
- Glinkin, I. A. Best quadrature formula on a class of convex functions. (Russian) 85j:41054
- Jetter, K. Gauß-Formeln vom lakunären Typ. [Gauss formulas of lacunary type] 85f:41026
- Kirov, G. Kh. See Prolov, P. D., 85i:41034
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- Prolov, P. D. (with Kirov, G. Kh.) A quadrature formula for approximate integration of functions of class  $C^r[0, 1]$ . (Russian) 85i:41034
- Rasputin, G. G. Construction of interpolational cubature formulas of Gauss type for approximate calculation of double integrals. (Russian) 85g:41039
- Richter-Dyn, Nira. Composite Hermite-Birkhoff quadrature formulas of Gaussian type. 85b:41043
- Shadimetov, Kh. M. Optimal quadrature formulas in  $L_p^n(\Omega)$  and  $L_p^n(\mathbb{R}^1)$ . (Russian) 85c:41030
- Shumelko, A. A. Optimal reconstruction of functions and functionals. (Russian) 85b:41075
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- Abdullaev, S. K. (with Vasil'ev, V. B.) A cubature formula for a multidimensional singular integral over a bounded  $m$ -dimensional domain. (Russian. English and Azerbaijani summaries) 85b:65053
- Acharya, B. P. (with Das, Rabindra Nath) On approximation of complex Cauchy principal value integrals. 85f:65018
- Aljarrah, Radwan. An error estimate for Gauss-Jacobi quadrature formula with the Hermite weight  $w(x) = \exp(-x^2)$ . 85f:65021
- Error estimates for Gauss-Jacobi quadrature formula with special weights. (Arabic summary) 85f:65022
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- Das, Rabindra Nath. See Acharya, B. P., 85f:65018
- Dickmeis, W. (with Nessel, R. J.; van Wickeren, E.) A general approach to counterexamples in numerical analysis. 85c:41036
- Gatteschi, Luigi (with Lyness, J. N.) An indirect approach to trigonometric quadrature rules. 85m:65022
- Haber, Seymour. Parameters for integrating periodic functions of several variables. 85g:65033
- Jetter, K. Some contributions to bivariate interpolation and cubature. (See 85g:41002)
- Kustov, Yu. A. Cubature formulas for singular integrals with fixed singularity. (Russian) 85g:65035
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- Lubinsky, D. S. Geometric convergence of Lagrangian interpolation and numerical integration rules over unbounded contours and intervals. 85f:65020
- Lyness, J. N. See Gatteschi, Luigi, 85m:65022
- Monegato, Giovanni. Convergence of product formulas for the numerical evaluation of certain two-dimensional Cauchy principal value integrals. 85b:65049
- Münzel, G. (with Renner, G.) Zur Charakterisierung und Berechnung von symmetrischen Kubaturformeln. (English summary) [On the characterization and computation of symmetric cubature formulas] 85b:65057
- Musae, B. I. Convergence of quadrature and cubature formulas for singular integrals. (Russian) 85m:65025
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- Nozov, M. V. Approximate integration of functions that are periodic with respect to several variables. (Russian) 85b:65058
- Ponomarenko, A. K. Estimation of the error functional of quadrature formulas with Chebyshev weight. (Russian) 85a:65046
- (with Chmeleva, M. M.) Some cubature formulas of the fourth and sixth degrees. (Russian) 85b:65023
- Rabinowitz, Philip (with Sloan, Ian H.) Product integration in the presence of a singularity. 85c:65023
- Rasputin, G. G. On the question of numerical characteristics of orthogonal polynomials of two variables. (Russian) 85b:65024
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- Zhenykhov, A. A. Monosplines of minimal defect. (Russian. Kazakh summary) 85c:41023
- Zhou, Yun Shi (with Sun, Yu Bai) Note on the expansion method of lowering dimension. (Chinese. English summary) 85b:41043

41A58 Series expansions (e.g. Taylor, Lidstone series, but not Fourier series)

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Mahoney, J. F. (with Sivazlian, B. D.) Partial fractions expansion: a review of computational methodology and efficiency. 85a:85048

Sivazlian, B. D. See Mahoney, J. F., 85a:85048

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41A60 Asymptotic approximations, asymptotic expansions (steepest descent, etc.) [See also 30E15.]

Bochar, B. K. On the approximation by the Cesàro mean of Jacobi expansion. 85h:41076

Brüning, Jochen On the asymptotic expansion of some integrals. 85j:41055

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Li, Zhi Shen (with Han, Xiao You) On a further generalization of the method of steepest descents. (Chinese. English summary) 85j:41057

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Ludwig, Donald Parsimonious asymptotics. 85g:41040

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Cavaretta, A. S., Jr. (with Goodman, T. N. T.; Micchelli, Charles A.; Sharma, Ambikeshwar) Multivariate interpolation and the Radon transform. III. Lagrange representation. 85f:41002

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- Some remarks on: "Simultaneous farthest points in normed linear spaces" [Math. Japon. 23 (1978/79), 191-197; MR 80d:46030] by S. Nanda. 85f:46045
- Nguyen, V. Hien See Strodiot, J.-J.; et al., 85i:41033
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- Lizorkin, P. I. (with Nikol'skii, S. M.) Approximation on a sphere in  $L_2$ . (Russian) 85h:41090
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- Esterle, J. (with Galé, José E.) Approximation of  $m$ -planar functions in a Hilbert space. (Spanish. English summary) (See 85i:90012)

- Fefferman, R. On an operator arising in the Calderón-Zygmund method of rotations and the Bramble-Hilbert lemma. 85g:42019
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- He, Ze Lin The derivatives and integrals of fractional order in Walsh-Fourier analysis, with applications to approximation theory. 85c:42029
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- Mainik, I. F. Projection test of equality of curves. (Russian) 85d:52005
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- Duffieux, P. M. ★ The Fourier transform and its applications to optics. 85f:78001
- Letac, Gérard ★ Intégration et probabilités. Analyse de Fourier et analyse spectrale. (French) [Integration and probability. Fourier analysis and spectral analysis] 85c:60003
- Nikol'skii, S. M. ★ Курс математического анализа. Том II. [Course in mathematical analysis. Vol. II] 85f:00001b

## 42-02 Advanced exposition (research surveys, monographs, etc.)

- Lenyuk, M. P. Integral transforms with separated variables (Weber, Fourier-Bessel, Legendre-Fourier transforms). (Russian) 85a:42001
- Prestini, Elena A survey on almost everywhere convergence of Fourier series. 85f:42001
- Uchiyama, Akihito On BMO. (Japanese) 85j:42001

## secondary classifications (42-02)

- Arocena, Rodrigo (with Cotlar, Mischa) Generalized Toeplitz kernels, Hankel forms and Sarason's commutation theorem. (Spanish summary) 85c:47027
- Carleson, Lennart Selected problems on exceptional sets. (See 85i:00004)
- Cotlar, Mischa See Arocena, Rodrigo, 85c:47027
- Dagman, É. E. (with Kukharev, G. A.) ★ Быстрые дискретные ортогональные преобразования. (Russian) [Fast discrete orthogonal transformations] 85h:94005
- Helson, Henry ★ Harmonic analysis. 85c:43001
- Kukharev, G. A. See Dagman, É. E., 85h:94005
- Okuyama, Yasuo ★ Absolute summability of Fourier series and orthogonal series. 85k:42021
- Salem, Raphael Algebraic numbers and Fourier analysis. (See 85i:00004)
- Xie, Ting Fan Some problems on the approximation of functions by polynomials. (Chinese) 85c:41009
- Selected reprints ★ {Selected reprints}. 85i:00004

## 42-03 Historical (must also be assigned at least one classification number from Section 01)

## secondary classifications (42-03)

- (Fejér, Léopold) See Kahane, J.-P., 85j:01026
- Kahane, J.-P. The importance of Fejér's work. 85j:01026
- Stein, E. M. The development of square functions in the work of A. Zygmund. 85e:01039
- Uf'yanov, P. L. Metric theory of functions. (Russian) (See 85g:01004)
- A. N. Kolmogorov and divergent Fourier series. (Russian) 85c:42006
- (Zygmund, Antoni) See Stein, E. M., 85e:01039

## 42-04 Explicit machine computation and programs (not the theory of computation or programming)

## secondary classifications (42-04)

- Tortorici Macaluso, Adele A program for some numerical algorithms with noteworthy precision requirements. (Italian) 85e:65009

## 42-06 Proceedings, conferences, etc.

(Nikol'skiĭ, S. M.) See *Orthogonal series and approximations of functions*, 85g:42002  
(Zhabitskii, L. V.) See *Some problems in the theory of functions*, 85g:42001 and 85g:42002

*Orthogonal series and approximations of functions* ★ *Orthogonal series and approximations of functions*. (Russian) 85f:42002

*Some problems in the theory of functions* ★ *Некоторые вопросы теории функций*. Tom I. (Russian) [Some problems in the theory of functions. Vol. I] 85g:42001

## secondary classifications (42-06)

(Babaev, A. A.) See *Singular integral operators*, 85g:00030

(De-Michele, Leonede) See *Topics in modern harmonic analysis*, 85d:22002

(Ricci, F.) See *Topics in modern harmonic analysis*, 85d:22002

Milan ★ *Topics in modern harmonic analysis*. Vol. I, II. 85d:22002

*Noncausal calculus and related topics* ★ *Noncausal calculus and related topics*. 85g:60002

## Seminar:

*Topics in modern harmonic analysis* ★ *Topics in modern harmonic analysis*. Vol. I, II. 85d:22002

*Singular integral operators* ★ *Сингулярные интегральные операторы*. (Russian) [Singular integral operators] 85g:00020

## Symposium:

*Noncausal calculus and related topics* ★ *Noncausal calculus and related topics*. 85g:60002

*Topics in modern harmonic analysis* ★ *Topics in modern harmonic analysis*. Vol. I, II. 85d:22002

Turin ★ *Topics in modern harmonic analysis*. Vol. I, II. 85d:22002

## 42Axx Fourier analysis in one variable

## 42A05 Trigonometric polynomials, inequalities, extremal problems

Ash, J. Marshall (with Jones, Roger L.; Safari, B.) *Inégalités sur des sommes d'exponentielles*. (English summary) [Inequalities for sums of exponentials] 85c:42002  
Babenko, A. G. An extremal problem for polynomials. (Russian) 85i:42001

Baskakov, V. A. See Romanova, T. B., 85i:42003

Guadalupe Hernandez, José Javier (with Rubio de Francia, José Luis) Some problems arising from prediction theory and a theorem of Kolmogorov. 85i:42002

Jones, Roger L. See Ash, J. Marshall; et al., 85c:42002

Kristiansen, G. K. Some inequalities for algebraic and trigonometric polynomials. II. 85g:42003

Ligun, A. A. (with Shalaev, V. V.) Inequalities of Favard type for differentiable functions. (Russian) 85g:42004

Lorentz, G. G. Convergence theorems for polynomials with many zeros. 85k:42001

Lu, Ming Gao An inequality involving trigonometric polynomials. (Chinese) (Not in MR)

Pichorides, S. K. Notes on trigonometric polynomials. 85d:42001

Romanova, T. B. (with Baskakov, V. A.) Some representations of cosine polynomials. (Russian) 85i:42003

Rubio de Francia, José Luis See Guadalupe Hernandez, José Javier, 85i:42002

Safari, B. See Ash, J. Marshall; et al., 85c:42002

Shalaev, V. V. See Ligun, A. A., 85g:42004

## secondary classifications (42A05)

Ding, Ping See Qi, Ming Gao, (Not in MR)

Fournier, John J. F. Some remarks on the recent proofs of the Littlewood conjecture. 85k:42005

Goldstein, Myron (with McDonald, John N.) An extremal problem for nonnegative trigonometric polynomials. 85i:30004

McDonald, John N. See Goldstein, Myron, 85i:30004

Oscini, A. (with Rosati, F.) Trigonometric hyper-Gaussian functionals. (Italian. English summary) 85k:65022

Qi, Ming Gao (with Ding, Ping) A note on estimation of complete trigonometric sums. (Chinese) (Not in MR)

Ragozin, David L. Limits of periodic smoothing splines. 85i:41007

Rahman, Qazi Ibadur (with Schmeisser, Gerhard) ★ *Les inégalités de Markoff et de Bernstein*. (French) [Markov and Bernstein inequalities] 85f:41009

Rosati, F. See Oscini, A., 85k:65022

Schmeisser, Gerhard See Rahman, Qazi Ibadur, 85f:41009

Stark, E. L. The kernel of Fejér-Korovkin: a basic tool in the constructive theory of functions. 85i:42006

## 42A10 Trigonometric approximation

Abbasov, R. A. Estimation of the approximation of almost periodic functions by means of a generalized modulus of continuity. (Russian) (See 85d:00010)

Bardinaĭskii, V. V. Strongly local theorems on approximation of periodic functions. 85j:42002

Baskakov, V. A. Approximation with the best order in  $C$  and  $L$ . (Russian) 85i:42004

Chen, Quan De Approximation of periodic continuous functions by harmonic means. (Chinese. English summary) 85j:42003

Dahmagulov, A. K. An exact constant in Jackson's inequality for functions represented by lacunary trigonometric series. (Russian) 85k:42002

Gogoladze, L. D. On a problem of L. Leindler concerning strong approximation by Fourier series and Lipschitz classes. 85k:42003

Gori, Laura Nicolò-Amati Approximations in an  $L^2$  space with linear combinations of a predetermined number of given functions. (Italian) 85k:42006

Grona, V. L. Approximation of continuous functions of several variables by spherical Riesz means. (Russian) 85k:42004

Hasson, Maurice (with Shisha, Oved) On the condition  $\sum_{n=1}^{\infty} n^{p-1} E_n^+(f) < \infty$ . 85a:42002

Holland, A. S. B. (with Sahney, B. N.; Mohapatra, Ram Narayan)  $L_p$  approximation of functions by Euler means. 85c:42003

Khatoun, N. See Waŭ, A., 85b:42003 and 85g:42005

Kushpel', A. K. See Stepanets, A. I., 85j:42004

Kutner, B. On nonuniqueness of the order of saturation. II. 85k:42005

Lekishvili, M. M. Approximation of periodic functions by  $(C, \alpha)$  means. (Russian) 85i:42005

Luo, Jun Bo (with Wang, Kun Yang) The approximation of continuous periodic functions of two variables by Marcinkiewicz type linear means of their Fourier series. (Chinese. English summary) 85m:42001

Mohapatra, Ram Narayan See Holland, A. S. B.; et al., 85c:42003

Oswald, Peter The rate of approximation by de la Vallée-Poussin means of trigonometric series in the metric of  $L_p$  ( $0 < p < 1$ ). (Russian. English and Armenian summaries) 85f:42003

Petrov, S. V. Estimates for norms of certain projection operators. (Russian) 85b:42001

Pimenova, L. M. (with Yatsenko, N. Ya.) Two-sided estimation of the Lebesgue function of a certain method of approximation. (Russian) 85h:42001

Ponomarenko, V. G. Moduli of smoothness of fractional order and best approximations in  $L_p$  ( $1 < p < \infty$ ). (Russian) 85a:42003

Privalov, A. A. Simultaneous interpolation and approximation of continuous functions. (Russian) 85k:42007

Qureshi, K. On the degree of approximation of a periodic function  $f$  by almost Nörlund means. 85h:42002

On the degree of approximation of function belonging to the class  $\text{Lip}(\alpha, p)$  by almost Riesz means of its conjugate series. 85k:42008

Rukavov, V. I. Approximation of periodic functions by linear means of their Fourier series. (Russian) 85f:42004

Sahney, B. N. See Holland, A. S. B.; et al., 85c:42003

Shechadri, A. Yu. Monotone approximation of functions by trigonometric polynomials. (Russian) 85e:42001

Shi, Xian Liang Some notes on a problem of L. Leindler. 85a:42004

Shisha, Oved See Hasson, Maurice, 85a:42002

Stark, E. L. The kernel of Fejér-Korovkin: a basic tool in the constructive theory of functions. 85i:42006

Stechkin, S. B. Some new problems of approximation theory. (Russian) (See 84k:41003) (Not in MR)

Stepanets, A. I. Classification of periodic functions and approximation by their Fourier sums. (Russian) 85b:42002

Simultaneous approximation of a pair of conjugate functions. 85a:42005  
(with Kushpel', A. K.) Best approximations and diameters of classes of periodic functions. (Russian) 85j:42004

Classes of periodic functions and the approximation of their elements by Fourier sums. (Russian) 85k:42009

Telyakovskii, S. A. Approximation of differentiable functions by second-order Cesàro means. (Russian) 85a:42006

Totkov, G. A. Exact values of best one-sided approximations by trigonometric polynomials and splines. (Russian) 85j:42005

Waŭ, A. (with Khatoun, N.) On the approximation of function by Borel matrix. 85b:42003

(with Khatoun, N.) A note on Rogosinski singular integral. 85g:42005

Wang, Kun Yang See Luo, Jun Bo, 85m:42001

Weng, Zu Yin Trigonometric splines of order 1. (Chinese) 85a:42007

Xie, Ting Fan On  $L^1$  approximation of functions having quasimonotone Fourier coefficients. (Chinese) (Not in MR)

On  $L^1$ -approximation of the functions with quasimonotone Fourier coefficients. 85d:42002

On two problems of Leindler. (Chinese) (Not in MR)

Yang, Wen Shan Approximation of continuous functions by Rogosinski means. (Chinese) 85j:42006

Yatsenko, N. Ya. See Pimenova, L. M., 85h:42001

Zheng, Shi Ming The approximation problem for Cesàro means and canonical means of Fourier series. (Chinese) (Not in MR)

## secondary classifications (42A10)

Babenko, V. F. Asymmetric approximations of classes  $W^r H^w$  by trigonometric polynomials and splines. (Russian) 85h:41047

Benedetto, John J. (with Heine, H. P.) Weighted Hardy spaces and the Laplace transform. 85j:44001

Berrut, Jean-Paul Baryzentrische Formeln zur trigonometrischen Interpolation. I. (English and French summaries) [Barycentric formulas for trigonometric interpolation. I.] 85m:65007

Chalmers, B. L. (with Mason, J. C.) Minimal  $L_p$  projections by Fourier, Taylor, and Laurent series. 85j:42020

Chen, Quan De On the degree of approximation of functions belonging to the class  $\text{Lip}(\alpha)$ . (Chinese. English summary) 85k:41032

Gil'manov, R. A. Polynomial approximation of a class of singular integro-differential equations. (Russian) 85h:45025

Gutknecht, M. H. Algebraically solvable Chebyshev approximation problems. 85h:41066

Heine, H. P. See Benedetto, John J., 85j:44001

Khoroshko, N. P. See Lipovik, V. V., 85h:42012

Levin, V. A. Approximation of differentiable functions by positive methods of summation of Fourier series. (Russian) 85b:41033

Lipovik, V. V. (with Khoroshko, N. P.) Order estimation of a strong approximation of functions by truncated Fourier integrals. (Russian) 85h:42012

Mason, J. C. See Chalmers, B. L., 85j:42020

Mohapatra, Ram Narayan (with Russell, D. C.) Some direct and inverse theorems in approximation of functions. 85e:41027

- Oswald, Peter On Besov-Hardy-Sobolev spaces of analytic functions in the unit disc. 85f:46071
- Popov, Vasil Atanasov On the one-sided approximation of multivariate functions. (See 85g:41007)
- Russell, D. C. See Mohapatra, Ram Narayan, 85e:41027
- Saxena, R. B. Error bounds in the approximation of functions. 85a:41023
- Sharapudinov, I. I. On the best approximation and polynomials of the least quadratic deviation. (Russian summary) 85d:41017
- Tong, Jingcheng A note on the degree of approximation of Fourier series. 85g:42006
- Tuchinskii, L. I. Classes  $T^{(r)}H_{\omega}M$  and approximations on them by Fourier-Sturm-Liouville operators. (Russian) 85j:41060
- Yang, Yi Qun The  $K$  functional and approximation degrees. I. (Chinese) 85k:41030a  
The  $K$  functional and approximation degrees. II. (Chinese) 85k:41030b

## 42A15 Trigonometric interpolation

- Khristov, V. Kh. Convergence of certain interpolation processes in integral and discrete norms. (Russian) 85b:42004
- Kushpel', A. K. A method of reconstruction of differentiable periodic functions by means of trigonometric polynomials. (Russian) 85k:42010

## secondary classifications (42A15)

- Agrawal, G. P. See Lax, Melvin, 85g:65030
- Butser, P. L. (with Stens, R. L.) The Euler-MacLaurin summation formula, the sampling theorem, and approximate integration over the real axis. 85b:65017
- Lax, Melvin (with Agrawal, G. P.) Corrigenda: "Evaluation of Fourier integrals using B-splines" [Math. Comp. 39 (1982), no. 160, 535-548; MR 83i:65021]. 85g:65030
- Stens, R. L. See Butser, P. L., 85b:65017
- Vértesi, P. Divergence of Lagrange interpolation (complex and trigonometric cases). 85d:30052

## 42A16 Fourier coefficients, Fourier series of functions with special properties, special Fourier series

- Alahyabeva, A. Transformation of trigonometric Fourier coefficients of a function from certain Banach spaces. (Russian) (See 85d:00009)
- Baskakov, V. A. The Lorentz theorem. (Russian) 85f:42005
- Berisha, Mukhareb Ch. Estimate of the Fourier coefficients of functions of the class  $H(p, k, \varphi)$  by using moduli of smoothness. (Serbo-Croatian. Russian summary) 85d:42003
- Fourier coefficients of periodic functions belonging to  $H(p, k, \varphi)$ -Nikol'skii classes. (Russian) 85b:42003
- Galizia Angeli, M. T. (with Moroni, P.) Note on a class of integral functions. (Italian. English summary) 85j:42007
- Gorbachuk, M. L. See Gorbachuk, V. I., 85m:42002
- Gorbachuk, V. I. (with Gorbachuk, M. L.) Trigonometric series, generalized periodic functions and boundary value problems of mathematical physics. (Russian) 85m:42002
- Gurielashvili, R. I. The majorant of partial sums of a Fourier series of a monotone function. (Russian) 85a:42006
- Hall, R. R. On an inequality of E. Heinz. 85k:42011
- Kahane, J.-P. Quatre leçons sur les homéomorphismes du cercle et les séries de Fourier. [Four lectures on homeomorphisms of the circle and Fourier series] 85k:42012
- Kandil, M. A. Convergence of Fourier coefficients' series for vector valued functions. 85h:42004
- Kimkawa, Masakiti Some generalizations of contraction theorems for Fourier series. 85f:42006
- (Kolmogorov, A. N.) See Schipp, Ferenc, 85h:42005
- Malešević, Jovan V. Fourier coefficients and some classes of sequences and functions. (Serbo-Croatian) 85f:42007
- Moroni, P. See Galizia Angeli, M. T., 85j:42007
- Ojha, S. M. See Singh, Vijendra, 85i:42007
- Petrovich, A. Yu. Summability by Abel's method of generalized Fourier series. (Russian) 85a:42009
- Prasad, Kanhaiya See Sinha, Sri Rama, 85f:42006
- Savić, Vladimir N. On the convergence of the partial sums of trigonometric series with monotone decreasing coefficients in symmetric function spaces. (Serbo-Croatian. English summary) 85e:42002
- Schipp, Ferenc (with Simon, Péter) A remark on a theorem of A. N. Kolmogorov. (Hungarian) 85h:42005
- Simon, Péter See Schipp, Ferenc, 85h:42005
- Singh, Vijendra (with Ojha, S. M.) On the sequence of Fourier coefficients. 85i:42007
- Sinha, Sri Rama (with Prasad, Kanhaiya) On a sequence of Fourier coefficients. 85f:42006
- Twomey, J. B. On certain sums of Fourier-Stieltjes coefficients. 85f:42009
- Yang, Yi Qun A characterization of convergence of series of Fourier coefficients. (Chinese) (Not in MR)
- On the convergence of series of Fourier coefficients. (Chinese) 85e:42003

## secondary classifications (42A16)

- Abian, Alexander Infinitely differentiable functions with prescribed derivatives at a point. (Spanish summary) 85f:26007
- Anderson, James Milne (with Clunie, J.) Characterizing sets in  $L^p$ -spaces. 85d:30046
- Clunie, J. See Anderson, James Milne, 85d:30046
- Ganguly, Ashok On  $(N, p_n^*)$  summability of the sequence of Fourier coefficients. 85e:42007
- Kandil, M. A. Parseval's identity and Banach spaces. 85i:46043
- Karchava, T. K. Summation of Fourier series by the Bernstein-Rogosinski method. (Russian. English and Georgian summaries) 85d:42007

- Kawata, Tatsuo Lipschitz classes of periodic stochastic processes and Fourier series. 85c:60079
- Kotlyar, B. D. A class of densities of sets of natural numbers. (Russian) 85h:11044
- Mashar, S. M. An estimate of the rate of convergence of the triangular matrix means of the Fourier series of functions of bounded variation. 85g:42009
- McGehee, O. Carruth Remarks on the Littlewood conjecture, and on harmonic synthesis. 85k:43006
- Stepanets, A. I. The behavior of sequences of partial Fourier sums of continuous functions near their points of divergence. (Russian) 85d:42006

## 42A20 Convergence of Fourier and trigonometric series

- Akhobadse, T. I. Convergence and summability of simple trigonometric Fourier series. (Russian. English and Georgian summaries) (See 85g:42001)
- Bray, William O. On a Tauberian theorem for the  $L^1$ -convergence of Fourier sine series. 85d:42004
- Chandra, Prem On the convergence criteria for the Fourier series. 85e:42004
- Donato, Patricia Some remarks on the weak convergence of functions oscillating nonuniformly. (Italian. English summary) 85k:42013
- Galst'yan, S. Sh. Everywhere divergent trigonometric Fourier series with rapidly decreasing coefficients. (Russian) 85m:42003
- Grigoryan, A. L. Discrete Lebesgue constants. (Russian) 85d:42005
- Gunlya, N. G. Convergence of Fourier series of almost periodic functions. (Russian. English and Georgian summaries) 85f:42010
- On generalization of A. I. Plesner's theorem on conjugate trigonometric series. (Russian. English and Georgian summaries) 85k:42014
- Ibrakimulov, A. M. Integral and differential properties of a function and its de la Vallée-Poussin means. (Russian. Kazakh summary) 85i:42006
- Korenblum, Boris A generalization of two classical convergence tests for Fourier series, and some new Banach spaces of functions. 85c:42004
- Korovkin, P. P. Fejér type operators and Fourier series. 85k:42015
- Mulyukina, T. I. Improvement of the convergence of Fourier series. (Russian) (See 85c:00006)
- Redheffer, Ray Convergence of Fourier series at a discontinuity. 85j:42008
- Stanojević, Vera B. On a theorem of P. L. Ulljanov. 85f:42011
- Stepanets, A. I. The behavior of sequences of partial Fourier sums of continuous functions near their points of divergence. (Russian) 85d:42006
- Tanović-Miller, N. On strong convergence of trigonometric and Fourier series. 85e:42005
- Tong, Jingcheng A note on the degree of approximation of Fourier series. 85g:42006
- Ulljanov, P. L. A. N. Kolmogorov and divergent Fourier series. (Russian) 85c:42006
- Wang, Si Lei Fourier series for the class of BMO functions. (Chinese. English summary) 85i:42009

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- Asatiani, V. O. (with Chanturiya, Z. A.) The modulus of variation of a function and the Banach indicatrix. 85c:26006
- Chanturiya, Z. A. See Asatiani, V. O., 85c:26006
- Feng, Yu Yu See Xi, Mei Cheng, 85c:42033 and Qi, Dong Xu, 85c:42034
- Kahanpää, Lauri (with Mejlbro, Leif) Some new results on the Muckenhoupt conjecture concerning weighted norm inequalities connecting the Hilbert transform with the maximal function. 85m:42010
- Liu, Teng Sun (with van Rooij, Arnold C. M.; Wang, Ju Kwei) A generalized Fourier transformation for  $L_1(G)$ -modules. 85f:43007
- Mejlbro, Leif See Kahanpää, Lauri, 85m:42010
- Qi, Dong Xu (with Feng, Yu Yu) On the convergence of  $U$ -Fourier series. (Chinese) 85c:42034
- van Rooij, Arnold C. M. See Liu, Teng Sun; et al., 85f:43007
- Savić, Vladimir N. On the convergence of the partial sums of trigonometric series with monotone decreasing coefficients in symmetric function spaces. (Serbo-Croatian. English summary) 85e:42002
- Wang, Ju Kwei See Liu, Teng Sun; et al., 85f:43007
- Xi, Mei Cheng (with Feng, Yu Yu) Divergence of the  $U$ -Fourier series of a function of bounded variation at a point of discontinuity. (Chinese. English summary) 85c:42033
- Yang, Yi Qun On the convergence of series of Fourier coefficients. (Chinese) 85e:42003

## 42A24 Summability of Fourier and trigonometric series

- Bolteun, L. G. (with Rybnikova, T. I.) Summation of trigonometric Fourier integrals by the method of G. F. Voronoï. (Russian) 85h:42006
- Bugrov, Ya. S. On convergence of linear means of Fourier series. 85k:42016
- Chandra, Prem A note on summable Fourier expansions. 85m:42004
- Chkhaldse, G. A. Summability of multiple series in the Haar system. (Russian. English and Georgian summaries) 85j:42009
- Dardshaniya, K. K. Some criteria for summability of Fourier-Laplace series. (Russian. English and Georgian summaries) 85k:42017
- Falaleev, L. P. A method of summation of Fourier-Jacobi series. (Russian) 85a:42010
- Ganguly, Ashok On  $(N, p_n^*)$  summability of the sequence of Fourier coefficients. 85e:42007
- Gogoladse, L. D. Strong summability of simple and multiple trigonometric Fourier series. (Russian. English and Georgian summaries) 85k:42018
- Grigor'ev, A. I. Convergence of Cesàro means of trigonometric Fourier series. (Russian) 85i:42010
- Gyires, B. Contribution to the Fourier series of matrix-valued functions. 85i:42011
- Hsiang, F. C. On the integro-jump of a function and its Fourier coefficients. II. 85g:42007
- Ji, Yao Ming Multipliers for  $|C, 1|$  summability of Fourier series. (Chinese) 85c:42008
- Multipliers for  $|C, 1|_1$  summability of Fourier series. (Chinese. English summary) 85g:42008
- Karchava, T. K. Summation of Fourier series by the Bernstein-Rogosinski method. (Russian. English and Georgian summaries) 85d:42007



- Kathal, D. P. See Sachan, M. P., 85f:42012
- Kazaryan, K. S. Summation in Abel's sense of conjugate trigonometric series in weighted  $L^p$  spaces and weighted  $H^p$  spaces,  $1 < p < \infty$ . (Russian. Armenian summary) 85f:42005
- Khocholeva, V. V. Summability of a Fourier-Laplace series by the  $K^\lambda$  method. (Russian. English and Georgian summaries) 85f:42019
- Kil'berg, E. M. (with Postina, V. S.) Application of Borel's integral method of summation to a series connected with a Fourier series. (Russian) 85h:42007
- Macharashvili, N. D. Sufficient conditions for  $(C, \alpha)$ -summability of a Fourier-Laplace differentiated series on  $S^1$ . (Russian. English and Georgian summaries) 85k:42020
- Mahapatra, P. C. The nonabsolute Riesz summability of Fourier series. 85a:42011
- Mashar, S. M. An estimate of the rate of convergence of the triangular matrix means of the Fourier series of functions of bounded variation. 85g:42009
- Novikova, N. S. (with Shakalova, T. V.)  $[C, 1]_p$ -summability of series connected with a Fourier series. (Russian) 85j:42010
- Okuyama, Yasuo ★ Absolute summability of Fourier series and orthogonal series. 85k:42021
- Postina, V. S. See Kil'berg, E. M., 85h:42007
- Rybnikova, T. I. See Boitsun, L. G., 85h:42006
- Sachan, M. P. (with Kathal, D. P.) On the product summability of the derived Fourier series. (Hindi. English summary) 85f:42012
- Shakalova, T. V. See Novikova, N. S., 85j:42010
- Sukia, Indulata On the  $(C, 1)$   $(N, p_n)$  summability of a sequence allied to the conjugate Fourier series. 85j:42011
- Totik, V. On the generalization of Fejér's summation theorem. 85h:42006
- Varma, Sushama K. On uniform matrix summability of a Fourier series. 85c:42009
- Xie, Dun Li The  $[N, p_n]_p$  summability of a Fourier series and its conjugate series. (Chinese) 85d:42008
- On the relationship between "uniform" and "almost everywhere" summability properties. (Chinese. English summary) 85j:42012
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- Akhobadze, T. I. Convergence and summability of simple trigonometric Fourier series. (Russian. English and Georgian summaries) (See 85g:42001)
- Akita, Minoru (with Kano, Takeshi) On the Borel summability of  $\sum_{n=1}^{\infty} n^{-\alpha} \exp(in^{\theta})$ . 85d:40005
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- Egikyan, R. S. (with Zhidkov, E. P.) ★ Об устойчивом суммировании интегралов Фурье некоторыми регулярными методами. (Russian) [Stable summation of Fourier integrals by certain regular methods] 85f:42013
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- Dikahit, G. D. On the absolute Cesàro summability of some series associated with Fourier series. 85h:42009
- Kanno, Kōei Absolute Riesz summability factors of Fourier series. 85g:42011
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## 42A32 Trigonometric series of special types (positive coefficients, monotonic coefficients, etc.)

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- Fienup, J. R. See Crimmins, T. R., 85b:42005
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- Khavin, V. P. See Jörkic, Burglind, 85f:42015
- Khoroshko, N. P. See Lipovik, V. V., 85h:42012
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- Saitoh, Saburo Fourier transforms with weighted functions and the Green's functions. 85j:42015
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- Popov, D. A. Application of smooth regularizers for convolution computation. (Russian) 85j:65009
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Sadosky, Cora See Cotlar, Mischa, 85i:42015

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Danikas, N. (with Nestoridis, V.) Interval averages of  $H^1$ -functions and BMO norm of inner functions. 85b:30048

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Gutknecht, M. H. On the computation of the conjugate trigonometric rational function and on a related splitting problem. 85a:41016

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Uniform continuity in weighted spaces  $L^p$ ,  $1 \leq p < \infty$ , of families of operators generated by truncated kernels. (Russian) 85d:46034

Koosis, Paul A derivation of the Cartwright-Levinson theorem from the theorem of Kolmogorov. (Russian. English summary) 85f:30039

Martín-Reyes, F. J. See Atencia, E., 85e:28025

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#### 42A55 Lacunary series of trigonometric and other functions; Riesz products

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secondary classifications (42A55)

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#### 42A61 Probabilistic methods

secondary classifications (42A61)

Kawata, Tatsuo Notes on the almost sure absolute convergence of the Fourier series of a stochastic process. 85g:60052

Kosachenko, Yu. V. Conditions for uniform convergence of Gaussian and near-Gaussian trigonometric series in the Luxemburg norm. (Russian) 85g:60050

Matveev, V. V. Fourier series for an almost periodic random sequence. (Russian. English summary) 85j:42056

#### 42A63 Uniqueness of trigonometric expansions, uniqueness of Fourier expansions, Riemann theory, localization

Chalmers, B. L. (with Mason, J. C.) Minimal  $L_p$  projections by Fourier, Taylor, and Laurent series. 85j:42020

Mason, J. C. See Chalmers, B. L., 85j:42020

Shaginyan, L. A. Uniqueness of trigonometric series. (Russian. Armenian summary) 85k:42030

secondary classifications (42A63)

Gevorgyan, G. G. Uniqueness sets for certain orthogonal series. (Russian. Armenian summary) 85k:42054

#### 42A65 Completeness of sets of functions

Dostanić, M. Completeness and minimality of certain systems of functions. (Russian. Serbo-Croatian summary) 85k:42031

Jakimovski, A. (with Russell, D. C.) An extension of Wiener's closure and Tauberian theorems. 85k:42032

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Russell, D. C. See Jakimovski, A., 85k:42032

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secondary classifications (42A65)

Gyires, B. Contribution to the Fourier series of matrix-valued functions. 85i:42011

#### 42A70 Trigonometric moment problems

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Sadosky, Cora See Cotlar, Mischa, 85i:42017

secondary classifications (42A70)

Artemenko, A. P. Hermitian-positive functions and positive functionals. I. (Russian) 85j:42022a

Hermitian-positive functions and positive functionals. II. (Russian) 85j:42022b

# 42A75 Classical almost periodic functions, mean periodic functions [See also 43A60.]

- Bănsaru, T. (with Crivăț, N.) On almost periodic multivalued maps with values in uniform spaces. (Romanian. English summary) **85d:43013**  
 Corduneanu, C. Almost periodic discrete processes. **85b:43016**  
 Crivăț, N. See Bănsaru, T., **85d:43013**  
 Farion, Z. D. See Koval'chuk, B. V., **85d:43014**  
 Haller, Hans (with Jacobs, Konrad) Extensions of Otto Toeplitz' combinatorial construction of almost periodic functions on the real line. **85h:43017**  
 Jacobs, Konrad See Haller, Hans, **85h:43017**  
 Koval'chuk, B. V. (with Farion, Z. D.) Convergence of Fourier series of certain classes of  $S^p$ -almost periodic matrices. (Ukrainian. Russian summary) **85d:43014**

## secondary classifications (42A75)

- Artemenko, A. P. Hermitian-positive functions and positive functionals. I. (Russian) **85j:43022a**  
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 Blinov, I. N. Absence of exact mean values for certain bounded functions. (Russian) **85b:36006**  
 Burlacu, V. See Cenușă, G., **85c:00078**  
 Cenușă, G. (with Burlacu, V.) Random functions  $N$ -almost periodic. (French and Russian summaries) **85c:00078**  
 Gunlya, N. G. Convergence of Fourier series of almost periodic functions. (Russian. English and Georgian summaries) **85d:43010**  
 Owens, Robyn A density problem for Hardy spaces of almost periodic functions. **85i:30070**  
 Poppe, H. (with Stärk, Andreas) A compactness criterion for the space of almost periodic functions. II. **85a:43007**  
 Stärk, Andreas See Poppe, H., **85a:43007**

# 42A82 Positive definite functions

- Arocena, Rodrigo (with Cotlar, Mischa) A generalized Herglotz-Bochner theorem and  $L^2$ -weighted inequalities with finite measures. **85d:43022**  
 Artemenko, A. P. Hermitian-positive functions and positive functionals. I. (Russian) **85j:43022a**  
 Hermitian-positive functions and positive functionals. II. (Russian) **85j:43022b**  
 Cotlar, Mischa See Arocena, Rodrigo, **85d:43022**

## secondary classifications (42A82)

- Casper, George (with Rahman, Misan) Product formulas of Watson, Bailey and Bateman types and positivity of the Poisson kernel for  $q$ -Racah polynomials. **85f:33015**  
 Ginsburg, V. N. (with Sharshanova, G. A.) Singularities of analytic Hermitian-positive functions. (Russian) **85d:30036**  
 Rahman, Misan See Casper, George, **85f:33015**  
 Sharshanova, G. A. See Ginsburg, V. N., **85d:30036**

# 42A85 Convolution, factorization

- Babenko, V. F. The diameters of certain classes of convolutions. (Russian) **85k:43033**  
 Chanillo, Sagun (with Kurtz, Douglas S.; Sampson, G.) Weighted  $L^p$  estimates for oscillating kernels. **85k:43034**  
 Kurtz, Douglas S. See Chanillo, Sagun; et al., **85k:43034**  
 Sampson, G. See Chanillo, Sagun; et al., **85k:43034**

## secondary classifications (42A85)

- Casper, George A convolution structure and positivity of a generalized translation operator for the continuous  $q$ -Jacobi polynomials. **85c:33006**  
 Kerman, R. A. Convolution theorems with weights. **85c:43025**  
 Kosarchin, V. M. See Kv̇r, I. D., **85f:00027**  
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 Stepanov, V. D. An integral convolution operator with a narrow interval of action. (Russian) **85k:47063**

# 42A99 None of the above, but in this section

- Stens, R. L. A unified approach to sampling theorems for derivatives and Hilbert transforms. (French and German summaries) **85g:43015**

## secondary classifications (42A99)

- Bourgain, J. Embedding  $L^1$  in  $L^1/H^1$ . **85j:46038**  
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 Feigin, L. A. See Svergun, D. I.; et al., **85m:78004**  
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 Shchedrin, B. M. See Svergun, D. I.; et al., **85m:78004**  
 Svergun, D. I. (with Feigin, L. A.; Shchedrin, B. M.) The solution of the one-dimensional sign problem for Fourier transforms. **85m:78004**

# 42Bxx Fourier analysis in several variables

## 42B05 Fourier series and coefficients

- Akhobadse, T. I. Convergence and summability of multiple trigonometric Fourier series. (Russian. English and Georgian summaries) (See **85g:43001**)  
 Balborodov, S. P. Lebesgue constants and approximation of functions by Fourier and Fejér sums. (Russian) **85k:43035**

## Approximation of functions of several variables by Fejér sums. (Russian)

- 85j:43023**  
 Bastia, A. I. On the asymptotics of the Riesz-Bochner kernel. (Russian summary) **85k:43036**  
 Bellinskii, E. S. Growth of the Lebesgue constants of partial sums generated by certain unbounded sets. (Russian) **85a:43015**  
 Blochanskii, I. L. The criteria of weak generalized localization in  $n$ -dimensional space. (Russian) **85a:43016**  
 Cartwright, Donald I. (with Soardi, Paolo M.) Best conditions for the norm convergence of Fourier series. **85a:43017**  
 Dia' Zung Approximation of classes of periodic functions of several variables. (Russian) **85d:43015**  
 Dzhanelidze, V. A. A summation method of Abel-Poisson type of differentiated multiple series and Fourier integrals. (Russian. English and Georgian summaries) **85j:43024**  
 Ebralidze, A. D. An analogue of A. Zygmund's theorem for multiple lacunary trigonometric series. (Russian) **85h:43018**  
 Summable functions of several variables with lacunary Fourier series. (Russian) **85c:43014**  
 Gafarov, A. See Israliova, M. M., **85a:43018**  
 Gogoladze, L. D. (with Zerekidze, T. Sh.) Integrability of conjugate functions of several variables and summability of multiple Fourier series. (Russian) **85c:43015**  
 Grona, V. L. Approximation of continuous functions of several variables by spherical Riesz means. (Russian. English summary) **85g:43016**  
 Israliova, M. M. (with Gafarov, A.) The summation rate by the Riesz method of differentiated multiple conjugated trigonometric series of some classes of functions. (Russian. Tajiki summary) **85a:43018**  
 Kandil, M. A. Parseval's identity on Banach spaces. **85g:43017**  
 Koslova, N. N. Conditions that do not guarantee localization of Riesz means of negative order. (Russian) **85h:43019**  
 Luo, Jun Bo Marcinkiewicz-type linear summability of double Fourier series. (Chinese. English summary) **85f:43023**  
 Maravić, Manojlo Slowly oscillating functions with remainder term and their application to the Riesz and  $G_\sigma^\lambda$  means of multiple Fourier series. (Serbo-Croatian. English summary) **85c:43016**  
 Móricz, Ferenc Approximation theorems for double orthogonal series. **85j:43025**  
 Nakhman, A. D. Theorems of Rosenblum-Muckenhoupt type for multiple Fourier series of vector-valued functions. (Russian) **85h:43020**  
 Nosenko, Yu. L. Summation of double Fourier series by methods of Bernstein-Rogosinski type. (Russian) **85b:43006**  
 Nowak, Zenon Criteria for absolute convergence of multiple Fourier series. **85d:43016**  
 Pachulla, N. L. Strong summability of multiple Fourier series in a system of functions of polynomial type. (Russian) **85f:43024**  
 Podkorytov, A. N. Intermediate rates of growth of Lebesgue constants in the two-dimensional case. (Russian) **85h:43021**  
 Sjölin, Per Regularity and integrability of spherical means. **85f:43025**  
 Skopina, M. A. Lebesgue constants of conjugate Fourier sums in the multidimensional case. (Russian) **85m:43013**  
 Šlaković, Semirha Absolute  $D$ -summability of multiple Fourier series. (Serbo-Croatian. English summary) **85a:43019**  
 Soardi, Paolo M. See Cartwright, Donald I., **85a:43017**  
 Stein, E. M. An  $H^1$  function with nonsummable Fourier expansion. **85f:43026**  
 Stepanets, A. I. Sharp estimates of multiple integrals on classes of continuous functions of several variables and their application. (Russian) **85d:43007**  
 Tsagareishvili, V. Sh. Absolute convergence of orthogonal Fourier series. (Russian. English and Georgian summaries) **85j:43026**  
 Wang, Kun Yang On the summability of multiple Fourier series. (Chinese. English summary) **85a:43020**  
 Zaderer, P. V. Norms of trigonometric polynomials of two variables. (Russian) **85k:43037**  
 Zerekidze, T. Sh. See Gogoladze, L. D., **85c:43015**  
 Zhishishvili, L. V. Divergence of multiple trigonometric Fourier series. (Russian. English and Georgian summaries) **85j:43027**

## secondary classifications (42B05)

- Bugrov, Ya. S. On convergence of linear means of Fourier series. **85k:43016**  
 Chkhaidze, G. A. Summability of multiple series in the Haar system. (Russian. English and Georgian summaries) **85j:43009**  
 Gogoladze, L. D. Strong summability of simple and multiple trigonometric Fourier series. (Russian. English and Georgian summaries) **85k:43018**  
 Grigoryan, M. Zh. Convergence almost everywhere of double Fourier-Haar series of summable functions. (Russian. Armenian summary) **85c:43035**  
 Grona, V. L. Approximation of continuous functions of several variables by spherical Riesz means. (Russian) **85k:43004**  
 Móricz, Ferenc A general moment inequality for the maximum of the rectangular partial sums of multiple series. **85c:43027**  
 Sjögren, Peter Fatou theorems and maximal functions for eigenfunctions of the Laplace-Beltrami operator in a bidisk. **85k:23036**  
 Skopina, M. A. Lebesgue constants of multiple de la Vallée-Poussin sums over polyhedra. (Russian) **85c:11072**

## 42B10 Fourier and Fourier-Stieltjes transforms and other transforms of Fourier type

- Igari, S. On the almost everywhere convergence of lacunary Riesz-Bochner means of Fourier transform of two variables. **85k:43038**  
 Jurkat, W. B. (with Sampson, G.) On rearrangement and weight inequalities for the Fourier transform. **85k:43040**



- (with Sampson, G.) On maximal rearrangement inequalities for the Fourier transform. **85k:42039**
- Kagan, G. M. Fourier and generalized shift transformations of Bessel functions. (Russian) **85a:42021**
- Liflyand, I. R. Absolute convergence and summability over spheres of multiple Fourier integrals of weakly discontinuous functions. (Russian) **85a:42022**
- Meng, Da Zhi A direct method for  $n$ -dimensional FFT and FST. (Chinese. English summary) **85g:42018**
- Okikolu, G. O. Estimates for Fourier transforms in terms of derivatives: Fourier transforms in  $L^1$ . **85d:42017**
- Ormerod, N. Fourier transforms and harmonic functions. **85j:42028**
- Ruis, Alberto On the restriction of Fourier transforms to curves. **85h:42022**
- Sampson, G. See Jurkat, W. B., **85k:42039** and **85k:42040**
- Trigub, R. M. Absolute convergence of Fourier integrals and approximation of functions by linear means of their Fourier series. (Russian) **85a:42023**
- secondary classifications (42B10)
- Fedyuk, V. F. The Fourier transform of some entire functions of several variables. (Russian. Tajiki summary) **85e:32003**
- Hörmander, Lars ★ The analysis of linear partial differential operators. I. **85g:35002a**
- Kerman, R. A. An integral extrapolation theorem with applications. **85j:46041**
- Kuo, Hui Huang Fourier-Mehler transforms of generalized Brownian functionals. **85d:60152**
- Robertson, A. P. (with Thornett, M. L.) On translation-bounded measures. **85m:28006**
- Saxe, Michael B. (with Sherman, Thomas O.) Hilbert and Fourier transforms on a sphere. **85j:58145**
- Sherman, Thomas O. See Saxe, Michael B., **85j:58145**
- Thornett, M. L. See Robertson, A. P., **85m:28006**
- 42B15 Multipliers
- Carbery, Anthony (with Gasper, George; Trebels, Walter) Radial Fourier multipliers of  $L^p(\mathbb{R}^2)$ . **85m:42013**
- Chanillo, Sagun The multiplier for the ball and radial functions. **85m:42014**
- Dappa, Henry A Marcinkiewicz criterion for  $L^p$ -multipliers. **85i:42018**
- El Kohen, A. On the hyperbolic Riesz means. **85c:42017**
- Gasper, George See Carbery, Anthony; et al., **85m:42013**
- Karadzhov, G. E. The trigonometric multiplier problem. (Russian) **85a:42024**
- Löfström, Jörgen A nonexistence theorem for translation invariant operators on weighted  $L^p$ -spaces. **85d:42016**
- Miyachi, Akihiko Notes on Fourier multipliers for  $H^p$ , BMO and the Lipschitz spaces. **85j:42029**
- Nagel, Alexander (with Vance, James; Wainger, Stephen; Weinberg, David A.) Hilbert transforms for convex curves. **85a:42025**
- Sampson, G. A note on oscillating kernels in two dimensions. **85j:42030**
- Stolov, Peio Taylor coefficients of multipliers of integrals of Cauchy type with bounded density. (Russian. English summary) **85j:42031**
- Trebels, Walter The principle of subordination and comparison theorems for approximation processes of Abel-bounded orthogonal expansions. **85d:42019**
- See also Carbery, Anthony; et al., **85m:42013**
- Vance, James See Nagel, Alexander; et al., **85a:42025**
- Wainger, Stephen See Nagel, Alexander; et al., **85a:42025**
- Weinberg, David A. See Nagel, Alexander; et al., **85a:42025**
- Yabuta, Kôzô Bilinear Fourier multipliers. **85i:42019**
- secondary classifications (42B15)
- Campbell, Douglas M. (with Leach, Ronald J.) A survey of  $H^p$  multipliers as related to classical function theory. **85i:30067**
- Chu, Ch'í P'ing On some algebraic properties of Sobolev spaces. **85f:43005**
- Some properties of Sobolev algebras. **85d:46050**
- Córdoba, A. Vector valued inequalities for multipliers. **85g:42023**
- Dappa, Henry (with Trebels, Walter) On hypersingular integrals and anisotropic Bessel potential spaces. **85j:46047**
- Johnson, Raymond L. Application of Carleson measures to partial differential equations and Fourier multiplier problems. **85f:42033**
- Kokilashvili, V. M. Weighted Lizorkin-Triebel spaces. Singular integrals, multipliers, imbedding theorems. (Russian) **85f:46068**
- Leach, Ronald J. See Campbell, Douglas M., **85i:30067**
- Poonima, S. On the Sobolev spaces  $W^{k,1}(\mathbb{R}^n)$ . **85g:46034**
- Schmeisser, H.-J. On spaces of functions and distributions with dominating mixed smoothness properties of Besov-Triebel-Lizorkin type. **85d:46047**
- Sjölin, Per Regularity and integrability of spherical means. **85f:42025**
- Trebels, Walter See Dappa, Henry, **85j:46047**
- 42B20 Singular integrals (Calderón-Zygmund, etc.)
- Abdullaev, F. A. Some properties of conjugate functions of two variables in moduli of smoothness. (Russian) **85m:42015**
- Bony, Jean-Michel Résolution des conjectures de Calderón et espaces de Hardy généralisés (d'après R. Coifman, G. David, A. McIntosh, Y. Meyer). [Resolution of the Calderón conjectures and generalized Hardy spaces (after R. Coifman, G. David, A. McIntosh, Y. Meyer)] **85b:42008**
- Burkholder, D. L. A geometric condition that implies the existence of certain singular integrals of Banach-space-valued functions. **85i:42020**
- Coifman, Ronald (with McIntosh, Alan G. R.; Meyer, Yves) Estimations  $L^2$  pour les noyaux singuliers. [ $L^2$ -estimates for singular kernels] **85a:42026**
- (with Meyer, Yves; Stein, E. M.) Un nouvel espace fonctionnel adapté à l'étude des opérateurs définis par des intégrales singulières. [A new function space suitable for the study of operators defined by singular integrals] **85j:42032**
- David, Guy (with Journé, Jean-Lin) A boundedness criterion for generalized Calderón-Zygmund operators. **85k:42041**
- Duduchava, Roland On multidimensional singular integral operators. I. The half-space case. **85j:42033a**
- On multidimensional singular integral operators. II. The case of compact manifolds. **85j:42033b**
- Dyn'kin, E. M. (with Osilenker, B. P.) Weighted estimates for singular integrals and their applications. (Russian) **85j:42034**
- Fefferman, R. Some topics in Calderón-Zygmund theory. **85a:42027**
- On an operator arising in the Calderón-Zygmund method of rotations and the Bramble-Hilbert lemma. **85g:42019**
- Jodeit, Max, Jr. (with Kenig, Carlos E.; Shaw, Richard K.) "Integration" of singular integrals of integrable functions and extensions of Stein's  $L \log L$  results. **85a:42028**
- Journé, Jean-Lin ★ Calderón-Zygmund operators, pseudodifferential operators and the Cauchy integral of Calderón. **85i:42021**
- See also David, Guy, **85k:42041**
- Kenig, Carlos E. See Jodeit, Max, Jr.; et al., **85a:42028**
- Khachatryan, G. Kh. A one-dimensional singular operator in weighted  $L_p$  spaces. (Russian) **85m:42016**
- Kriekes, Basil C. Weighted  $L^p$  estimates for the Cauchy integral operator. **85h:42023**
- Lu, Shan Zhen The existence of the entropy of conjugate functions. (Chinese) (Not in MR)
- Madan, Shobha (with Sjögren, Peter) Poisson integrals of absolutely continuous and other measures. **85m:42017**
- McIntosh, Alan G. R. See Coifman, Ronald; et al., **85a:42026**
- Meyer, Yves See Coifman, Ronald; et al., **85a:42026** and **85j:42033**
- Miyachi, Akihiko Products of distributions in  $H^p$  spaces. **85j:42035**
- (with Yabuta, Kôzô) On good  $\lambda$ -inequalities. **85i:42022**
- Nogin, V. A. (with Samko, S. G.) Convergence in  $L_p(\mathbb{R}^n)$  of hypersingular integrals with a homogeneous characteristic. (Russian) **85g:42020**
- Osilenker, B. P. See Dyn'kin, E. M., **85j:42034**
- Phong, D. H. (with Stein, E. M.) Singular integrals with kernels of mixed homogeneities. **85b:42009**
- Prestini, Elena A contribution to the study of the partial sums operator  $S_{NN^2}$  for double Fourier series. (Italian summary) **85k:42042**
- Rubio de Francia, José Luis (with Ruis, Francisco J.; Torrea Hernandez, José Luis) Les opérateurs de Calderón-Zygmund vectoriels. (English summary) [Calderón-Zygmund vector operators] **85h:42024**
- Ruis, Francisco J. See Rubio de Francia, José Luis; et al., **85h:42024**
- Rzaev, R. M. Local properties of conjugate functions of two variables. (Russian) **85m:42018**
- Samko, S. G. Singular integrals over a sphere and the construction of the characteristic from the symbol. (Russian) **85f:42027**
- See also Nogin, V. A., **85g:42020**
- Sawyer, Eric T. Norm inequalities relating singular integrals and the maximal function. **85c:42018**
- Shaw, Richard K. See Jodeit, Max, Jr.; et al., **85a:42028**
- Simonenko, I. B. Weight properties of the exponent of a multidimensional singular integral. (Russian) **85k:42043**
- Sjögren, Peter See Madan, Shobha, **85m:42017**
- Stein, E. M. See Phong, D. H., **85b:42009** and Coifman, Ronald; et al., **85j:42033**
- Strichartz, Robert S. Singular integrals supported on submanifolds. **85c:42019**
- Stupelis, Liudvikas Boundedness of singular integral operators in weighted spaces. (Russian. English and Lithuanian summaries) **85f:42028**
- Torrea Hernandez, José Luis See Rubio de Francia, José Luis; et al., **85h:42024**
- Uchiyama, Akihito The singular integral characterization of  $H^p$  on simple martingales. **85c:42020**
- Yabuta, Kôzô See Miyachi, Akihiko, **85i:42022**
- secondary classifications (42B20)
- Abdullaev, S. K. A multidimensional singular integral over a bounded  $m$ -dimensional domain. (Russian) **85g:45009**
- Bastia, A. I. On the asymptotics of the Riesz-Bochner kernel. (Russian summary) **85k:42036**
- Burbea, Jacob The Bergman and Schiffer transforms on weighted norm spaces. **85h:30064**
- Carbery, Anthony (with Gasper, George; Trebels, Walter) Radial Fourier multipliers of  $L^p(\mathbb{R}^2)$ . **85m:42013**
- Din' Zung Approximation of classes of periodic functions of several variables. (Russian) **85d:42015**
- Fefferman, Charles The uncertainty principle. **85f:35001**
- Gasper, George See Carbery, Anthony; et al., **85m:42013**
- Gaziev, A. Necessary and sufficient conditions for continuity of the Martinelli-Bochner integral. (Russian) **85a:32007**
- Godofroy, Gilles Espaces  $H^1$  sur des domaines généraux. [ $H^1$ -spaces on general domains] **85j:46040**
- Greenleaf, Allan Pointwise convergence of singular convolution operators. **85f:22010**
- Janson, Svanite (with Wolff, Thomas H.) Schatten classes and commutators of singular integral operators. **85a:47026**
- Kokilashvili, V. M. Singular and bisingular integral operators in weight spaces. (Russian) **85h:47059**
- Weighted Lizorkin-Triebel spaces. Singular integrals, multipliers, imbedding theorems. (Russian) **85f:46068**
- Nagel, Alexander (with Vance, James; Wainger, Stephen; Weinberg, David A.) Hilbert transforms for convex curves. **85a:42025**
- Sampson, G. A note on oscillating kernels in two dimensions. **85j:42030**
- Trebels, Walter See Carbery, Anthony; et al., **85m:42013**
- Vance, James  $L^p$ -boundedness of the multiple Hilbert transform along a surface. **85h:44010**

See also Nagel, Alexander; et al., 85a:42025

Walinger, Stephen See Nagel, Alexander; et al., 85a:42025

Weinberg, David A. See Nagel, Alexander; et al., 85a:42025

Wolff, Thomas H. See Janson, Svante, 85a:47026

#### 42B25 Maximal functions, Littlewood-Paley theory

Achour, A. (with Trimèche, K.) La  $g$ -fonction de Littlewood-Paley associée à un opérateur différentiel singulier sur  $(0, \infty)$ . [The Littlewood-Paley  $g$ -function associated with a singular differential operator on  $(0, \infty)$ ] 85f:42029

Almar, Hugo (with Macías, Roberto A.) Weighted norm inequalities for the Hardy-Littlewood maximal operator on spaces of homogeneous type. 85m:42019

Andersen, Kenneth F. (with Young, Wo Sang) On the reverse weak type inequality for the Hardy maximal function and the weighted classes  $L(\log L)^k$ . 85k:42044

Bogby, Richard J. A note on the strong maximal function. 85g:42021

Chanillo, Sagun (with Wheeden, Richard L.) Relations between Peano derivatives and Marcinkiewicz integrals. 85k:42030

(with Wheeden, Richard L.) Inequalities for Peano maximal functions and Marcinkiewicz integrals. 85k:42045

(with Wheeden, Richard L.) A note on a maximal function of C. Fefferman and Stein. 85g:42022

Córdoba, A. Vector valued inequalities for multipliers. 85g:42033

Durán, Ricardo G. On polynomial approximation in Sobolev spaces. 85a:42010

Gatto, Angel E. (with Gutiérrez, Cristian E.) On weighted norm inequalities for the maximal function. 85f:42031

Gutiérrez, Cristian E. See Gatto, Angel E., 85f:42031

Hunt, Richard A. (with Kurtz, Douglas S.; Neugebauer, C. J.) A note on the equivalence of  $A_p$  and Sawyer's condition for equal weights. 85f:42032

(with Kurtz, Douglas S.) The Hardy-Littlewood maximal function on  $L(p, 1)$ . 85h:42025

Kurtz, Douglas S. See Hunt, Richard A.; et al., 85f:42032 and 85h:42025

Leckband, M. A. (with Neugebauer, C. J.) Weighted iterates and variants of the Hardy-Littlewood maximal operator. 85c:42021

Macías, Roberto A. See Almar, Hugo, 85m:42019

Neugebauer, C. J. See Leckband, M. A., 85c:42021 and Hunt, Richard A.; et al., 85f:42032

Qian, Tao The preservation of the Lipschitz spaces under several maximal operators. 85m:42020

Taberski, Roman Extremal functions in the classes  $H_k^p$  ( $k = 1, 2$ ). 85i:42023

Trimèche, K. See Achour, A., 85f:42029

Welland, G. V. Strong differentials in  $L^p$ . 85c:42022

Wheeden, Richard L. See Chanillo, Sagun, 85f:42030; Chanillo, Sagun, 85g:42022 and 85k:42045

Young, Wo Sang See Andersen, Kenneth F., 85k:42044

secondary classifications (42B25)

Bloom, Steven The maximal function on weighted BMO. 85j:42017

Cima, J. A. (with Krantz, Steven G.) The Lindelöf principle and normal functions of several complex variables. 85b:32007

Dappa, Henry A Marcinkiewicz criterion for  $L^p$ -multipliers. 85i:42018

DeVore, Ronald A. (with Sharpley, Robert C.) Maximal functions measuring smoothness. 85g:46039

Dyn'kin, E. M. (with Osilenker, B. P.) Weighted estimates for singular integrals and their applications. (Russian) 85j:42034

Fefferman, Charles The uncertainty principle. 85f:35001

Fefferman, R. Some topics in Calderón-Zygmund theory. 85a:42027

Gatto, Angel E. (with Gutiérrez, Cristian E.; Wheeden, Richard L.) On weighted fractional integrals. 85f:26010

Gutiérrez, Cristian E. See Gatto, Angel E.; et al., 85f:26010

Kahanpää, Lauri (with Mejbro, Leif) Some new results on the Muckenhoupt conjecture concerning weighted norm inequalities connecting the Hilbert transform with the maximal function. 85m:42010

Krantz, Steven G. See Cima, J. A., 85b:32007

Mejbro, Leif See Kahanpää, Lauri, 85m:42010

Miyachi, Akihiko (with Yabuta, Kōsō) On good  $\lambda$ -inequalities. 85i:42022

Nestlerode, W. C. (with Stoll, Manfred) Radial limits of  $n$ -subharmonic functions in the polydisc. 85h:32002

Osilenker, B. P. See Dyn'kin, E. M., 85j:42034

Sawyer, Eric T. Norm inequalities relating singular integrals and the maximal function. 85c:42018

Weighted Lebesgue and Lorentz norm inequalities for the Hardy operator. 85f:26013

A two weight weak type inequality for fractional integrals. 85j:26010

Sharpley, Robert C. See DeVore, Ronald A., 85g:46039

Sjögren, Peter On the maximal function for the Mehler kernel. 85j:35031

Stoll, Manfred See Nestlerode, W. C., 85h:32002

Takano, Katsuo An application of weighted norm inequalities for maximal functions to semigroups of convolution transforms on  $L_w^p(\mathbb{R}^n)$ . 85e:47047

Triebel, Hans Periodic spaces of Besov-Hardy-Sobolev type and related maximal inequalities for trigonometrical polynomials. (See 85h:00009)

Vakhaniya, Z. N. Multiparameter ergodic theorems. (Russian. English and Georgian summaries) 85b:28018

Wheeden, Richard L. See Gatto, Angel E.; et al., 85f:26010

Yabuta, Kōsō See Miyachi, Akihiko, 85i:42022

#### 42B30 $H^p$ -spaces

Adams, Ernest On the identification of weighted Hardy spaces. 85g:42024

Daly, James On the necessity of the Hörmander condition for multipliers on  $HP(\mathbb{R}^n)$ . 85c:42023

David, Guy Courbes corde-arc et espaces de Hardy généralisés. (English summary) [Chord-arc curves and generalized Hardy spaces] 85d:42020

De Sousa, Geraldo Soares Spaces formed by special atoms. I. 85j:42036

Ding, Xia Xi Higher-dimensional singular integrals and harmonic functions. (Chinese. English summary) 85k:42046

Fefferman, R. (with Gundy, Richard F.; Silverstein, Martin L.; Stein, E. M.) Inequalities for ratios of functionals of harmonic functions. 85c:42024

Garnett, John B. (with Jones, Peter Wilcox) BMO from dyadic BMO. 85d:42021

Gatto, Angel B. (with Segovia, Carlos; Jiménez, Julio R.) On the solution of the equation  $\Delta^m F = f$  for  $f \in H^p$ . 85k:42047

Gundy, Richard F. The density of the area integral. 85k:42048

See also Fefferman, R.; et al., 85c:42024

Jawerth, Björn The  $K$ -functional for  $H^1$  and BMO. 85j:42037

Jiménez, Julio R. See Gatto, Angel B.; et al., 85k:42047

Johnson, Raymond L. Application of Carleson measures to partial differential equations and Fourier multiplier problems. 85f:42033

Jones, Peter Wilcox Interpolation between Hardy spaces. 85a:42029

Some topics in the theory of Hardy spaces. 85j:42038

See also Garnett, John B., 85d:42021

Khrushchëv, S. V. A description of weights satisfying the  $A_\infty$  condition of Muckenhoupt. 85k:42049

Komori, Yasuo The factorization of  $H^p$  and the commutators. 85i:42024

Krotov, V. G. Differential properties of boundary values of functions from Hardy classes. (Russian. English summary) 85m:42021

Long, Rui Lin (with Yang, Le) BMO functions in spaces of homogeneous type. 85m:42022

Neri, Umberto Weighted  $H^1$ -BMO dualities. 85f:42034

Oswald, Peter Marcinkiewicz means of double Fourier integrals in  $H_p$  ( $p \leq 1$ ). (Russian) 85h:42026

Segovia, Carlos See Gatto, Angel B.; et al., 85k:42047

Semmes, Stephen Another characterization of  $H^p$ ,  $0 < p < \infty$ , with an application to interpolation. 85c:42011

Shields, Allen L. An analogue of the Fejér-Riesz theorem for the Dirichlet space. 85j:42039

Silverstein, Martin L. See Fefferman, R.; et al., 85c:42024

Sjölin, Per (with Strömberg, Jan-Olov) Spline systems as bases in Hardy spaces. 85m:42023

Stein, E. M. See Fefferman, R.; et al., 85c:42024

Strömberg, Jan-Olov See Sjölin, Per, 85m:42023

Taibleson, Mitchell (with Weiss, Guido) Certain function spaces connected with almost everywhere convergence of Fourier series. 85i:42025

Tevesadze, T. Sh. Some classes of functions and trigonometric Fourier series. (Russian. English and Georgian summaries) 85k:42050

Weiss, Guido See Taibleson, Mitchell, 85i:42025

Yang, Le See Long, Rui Lin, 85m:42022

secondary classifications (42B30)

Abbasi-Ghilmansari, F. See Banks, S. P., 85j:93017

Banks, S. P. (with Abbasi-Ghilmansari, F.) On systems with spectral cluster points and their relation to  $H^p$  spaces. 85j:93017

Besov, O. V. Integral representations of functions in a domain with the flexible horn condition, and imbedding theorems. (Russian) 85i:46036

Chang, Sun-Yung A. Two remarks about  $H^1$  and BMO on the bidisc. 85c:32007

(with Ciesielski, Z.) Spline characterizations of  $H^1$ . 85f:46051

Ciesielski, Z. See Chang, Sun-Yung A., 85f:46051

Gilbert, J. E. (with Tomas, P. A.; Kunze, R. A.; Stanton, R. J.) Higher gradients and representations of Lie groups. 85k:22032

Goodrich, R. K. (with Gustafson, K. E.) Regular representation and approximation. 85m:43001

Groszmann, A. (with Morlet, J.) Decomposition of Hardy functions into square integrable wavelets of constant shape. 85i:81146

Gustafson, K. E. See Goodrich, R. K., 85m:43001

Imoru, Christopher Olutunde Variations of integral means and Hardy-Littlewood maximal functions. 85g:26012

Kufner, Alois See Opic, Bohumír, 85j:46053

Kunze, R. A. See Gilbert, J. E.; et al., 85k:22032

Long, Rui Lin On the distance of  $f \in BMO$  from  $L^\infty$ . (Chinese) 85a:60051

Lukashenko, T. P. Properties of functions of bounded variation on a set. (Russian) 85a:42014

Milman, Mario Fourier type and complex interpolation. 85e:46028

Miyachi, Akihiko Products of distributions in  $H^p$  spaces. 85j:42035

Morlet, J. See Groszmann, A., 85i:81146

Opic, Bohumír (with Kufner, Alois) Weighted  $S. L.$  Sobolev spaces and the  $N$ -dimensional Hardy inequality. (Russian) 85j:46053

Shvartsmann, P. A. Lipschitz sections of set-valued mappings and traces of functions from the Zygmund class on an arbitrary compactum. (Russian) 85j:46057

Stanton, R. J. See Gilbert, J. E.; et al., 85k:22032

Sundberg, Carl Values of BMOA functions on interpolating sequences. 85j:46035

Tomas, P. A. See Gilbert, J. E.; et al., 85k:22032

Uchiyama, Akihito On BMO. (Japanese) 85j:42001

Yamaguchi, Hiroshi An extension of a theorem of F. Forelli. 85b:43001

42B99 None of the above, but in this section

**Abshalomov, T.** A class of functions that is invariant with respect to a double singular Cauchy integral. (Russian) 85d:42022

**Johnson, Raymond L.** Definition of generalized Carleson measures and applications. 85m:42024

**Kerman, R. A.** Convolution theorems with weights. 85c:42025

**Pan, Wen Jie** The uniform approximation and convergence problems for spherical means of multiple Fourier integrals of functions in  $Lip(1, p)$ . (Chinese. English summary) 85k:42051

**Šlaković, Semiha**  $D$ -summability of derived multiple Fourier series. (Serbo-Croatian. English summary) 85j:42040

secondary classifications (42B99)

**Baernstein, Albert, II** (with Manfredi, Juan J.) Topics in quasiconformal mapping. 85j:30037

**Fehr, F.** The Marcinkievics interpolation theorem for rearrangement-invariant function spaces and applications. (German and Russian summaries) 85b:40037

**de Guzmán, Miguel** Some results and open problems in differentiation of integrals. 85f:26002

**Manfredi, Juan J.** See Baernstein, Albert, II, 85j:30037

**Okikiolu, G. O.** Weak-norm and  $L^p$ -estimates for bilinear expressions which define operators mapping between pairs of  $L^p$ -spaces. 85i:47032

**Sato, Hajime** A construction of a back-ground noise. 85h:60080

**Uchiyama, Akihito** A constructive proof of the Fefferman-Stein decomposition of BMO on simple martingales. 85j:60083

**Ugulava, D. K.** Approximation of periodic functions of several variables by Fejér sums. (Russian) 85j:41042

Approximation of periodic functions of several variables. (Russian) 85j:41043

## 42Cxx Nontrigonometric Fourier analysis

42C05 Orthogonal functions and polynomials, general theory

[See also 33A65.]

**Alfaro, Ma. Pilar** (with Vigil, Luis) Orthogonal polynomials on the unit circle: existence and determination of recurrence formulas in the general case. (Spanish. English summary) (See 85i:00012)

Some results concerning orthogonal polynomials on an arbitrary circle. (Spanish. English summary) (See 85g:00026)

**Badkov, V. M.** Asymptotic properties of orthogonal polynomials. (Russian) 85c:42026

**Bollinger, Richard C.** Recurrence relations for biorthogonal polynomials. 85j:42041

**Bonan, Stanford S.** (with Nevai, Paul) Orthogonal polynomials and their derivatives. I. 85f:42035

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- 42C25 Uniqueness and localization for orthogonal series  
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## 42C30 Completeness of sets of functions

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## 43A05 Measures on groups, semigroups, etc.

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Karanikas, C. Pathological properties and a.i.p. measures on metrizable groups. 85i:43001

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**43A30** Fourier and Fourier-Stieltjes transforms on nonabelian groups and on semigroups, etc.

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**Hewitt, E.** Some new Fourier series and their convergence. (See **85h:00009**)

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**Arendt, W.** (with D'Antoni, C.) A spectral mapping theorem for representations of compact groups. (German and Russian summaries) **85d:22010**

**Bonnet, Pierre** Transformation de Fourier des distributions de type positif sur un groupe de Lie unimodulaire. [Fourier transform of positive distributions on unimodular Lie groups] **85j:22023**

**D'Antoni, C.** See **Arendt, W.**, **85d:22010**

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**43A32** Other transforms and operators of Fourier type

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**Nghiêm Xuân Hai** La transformation de Fourier-Plancherel analytique des groupes de Lie. I. Algèbres de Weyl et opérateurs différentiels. [The analytic Fourier-Plancherel transform of Lie groups. I. Weyl algebras and differential operators] **85k:22020a**

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**Oberlin, Daniel M.**  $L^p - L^q$  mapping properties of the Radon transform. **85j:44005**

**43A35** Positive definite functions on groups, semigroups, etc.

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**Maserick, P. H.** (with Szafraniec, F. H.) Equivalent definitions of positive definiteness. **85j:46098**

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**43A45** Spectral synthesis on groups, semigroups, etc.

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**MacLean, H. Alan** Riesz sets and a theorem of Bochner. **85g:43008**

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**Sato, Enji** Maximal ideals of the convolution measure algebra for nondiscrete locally compact abelian groups. **85e:43005**

**43A50** Convergence of Fourier series and of inverse transforms

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**Rashwan, R. A.** See **Kandil, M. A.**, **85f:43014**; **85i:43013a** and **85i:43013b**

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**Pisier, Gilles** Some applications of the metric entropy condition to harmonic analysis. **85f:60061**

**Wang, Shi Kun** (with Dong, Dao Zhen) Harmonic analysis on rotation groups. I. Criterion for convergence of Fourier series. (Chinese) **85j:43007**

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**Dong, Dao Zhen** (with Wang, Shi Kun) Harmonic analysis on rotation groups. II. Cesàro summability of Fourier series. (Chinese) **85j:43008**

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**Hulanicki, A.** (with Jenkins, J. W.) Almost everywhere summability on nilmanifolds. **85f:22011**

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**Stein, E. M.** Boundary behavior of harmonic functions on symmetric spaces: maximal estimates for Poisson integrals. **85j:22020**

**Wang, Shi Kun** (with Dong, Dao Zhen) Harmonic analysis on rotation groups. III. Spherical summability of Fourier series. (Chinese) **85j:43009**

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**43A60** Almost periodic functions on groups and semigroups and their generalizations (recurrent functions, distal functions, etc.); almost automorphic functions

**Basit, Bolis** (with Emam, Magdi) Differences of functions in locally convex spaces and applications to almost periodic and almost automorphic functions. **85d:43005**

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**Dzinytyewy, Heneri A. Murima** (with Milnes, Paul) Functions with separable orbits on foundation semigroups. **85a:43006**

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**Milnes, Paul** See **Dzinytyewy, Heneri A. Murima**, **85a:43006**

**Poppe, H.** (with Stärk, Andreas) A compactness criterion for the space of almost periodic functions. II. **85a:43007**

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**Wolfenstetter, Stefan** Weakly almost periodic functions on hypergroups. **85h:43008**

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**Basit, Bolis** On the indefinite integrals of abstract functions. **85m:26027**

**Berglund, John F.** (with Hindman, Neil) Filters and the weak almost periodic compactification of a discrete semigroup. **85e:22005**

**Crombez, G.** Subspaces of  $L_\infty(G)$  with unique topological left invariant mean. **85k:43001**

**Følner, Erling** Some special  $W$ -almost periodic sets on the integers. **85j:11086**

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**Székelyhidi, László** Almost periodicity and functional equations. **85h:39003**

**Venkataraman, K.** The Boolean algebras  $A(G)$ ,  $F(G)$ . **85e:06021**

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- Hausenschild, Wilfried (with Kaniuth, Eberhard; Kumar, Ajay) Harmonic analysis on central hypergroups and induced representations. **85c:43016**
- Kaniuth, Eberhard See Hausenschild, Wilfried; et al. **85c:43016**
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- Mantero, Anna Maria (with Zappa, Anna) Uniformly bounded representations and  $L^p$ -convolution operators on a free group. **85i:43015**
- Zappa, Anna See Mantero, Anna Maria, **85i:43015**

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- Anker, Jean-Philippe Applications de la  $p$ -induction en analyse harmonique. [Applications of  $p$ -induction in harmonic analysis] **85c:22008**
- Lee, Tan Yu Embedding theorems in group  $C^*$ -algebras. **85a:22013**
- Mantero, Anna Maria (with Zappa, Anna) The Poisson transform and representations of a free group. **85b:22010**
- Mosak, Richard D. A note on Banach representations of Moore groups. **85d:22012**
- Nomura, Takaaki The Paley-Wiener type theorem for the oscillator group. **85k:22024**
- Pateron, Alan L. T. Harmonic analysis on unitary groups. **85h:22010**
- Varadarajan, V. S. Oscillator integrals and their applications to harmonic analysis on semisimple Lie groups. **85g:58068**
- Zappa, Anna See Mantero, Anna Maria, **85b:22010**

## 43A70 Analysis on specific locally compact abelian groups [See also 11R56.]

- Daly, James (with Phillips, Keith) On singular integrals, multipliers,  $\mathfrak{H}^1$  and Fourier series—a local field phenomenon. **85c:43008**
- Hewitt, E. Conjugate Fourier series on the character group of the additive rationals. **85i:43016**
- Phillips, Keith See Daly, James, **85c:43008**

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- Brown, Gavin (with Moran, William) Raikov systems and radicals in convolution measure algebras. **85j:43004**
- Moran, William See Brown, Gavin, **85j:43004**
- Tateoka, Jun Equivalence of Fourier multipliers on local fields. **85k:43008**

## 43A75 Analysis on specific compact groups

- Dong, Dao Zhen (with Wang, Shi Kun) Harmonic analysis on rotation groups. II. Cesàro summability of Fourier series. (Chinese) **85j:43008**
- See also Wang, Shi Kun, **85j:43007** and **85j:43009**
- Wang, Shi Kun (with Dong, Dao Zhen) Harmonic analysis on rotation groups. I. Criterion for convergence of Fourier series. (Chinese) **85j:43007**
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- See also Dong, Dao Zhen, **85j:43008**

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- Chen, Guang Xiao (with He, Zu Qi) Harmonic analysis on unitary-symplectic group. III. Abel summability of Fourier series. (Chinese. English summary) **85g:22019**
- (with He, Zu Qi) Harmonic analysis on unitary-symplectic group. IV. Spherical summability of Fourier series. (Chinese. English summary) **85g:22020**
- See also He, Zu Qi, **85g:22018**
- Fischer, Hans R. (with Jungster, Jerry J.; Williams, Floyd L.) The heat kernel on the two-sphere. **85m:58172**
- Gilbert, J. E. (with Kunze, R. A.; Stanton, R. J.; Tomas, P. A.) A kernel for generalized Cauchy-Riemann systems. **85j:22026**
- He, Zu Qi (with Chen, Guang Xiao) Harmonic analysis on unitary-symplectic group. II. Cesàro summability of Fourier series. (Chinese. English summary) **85g:22018**
- See also Chen, Guang Xiao, **85g:22019** and **85g:22020**
- Jungster, Jerry J. See Fischer, Hans R.; et al. **85m:58172**
- Kunze, R. A. See Gilbert, J. E.; et al. **85j:22026**
- Lukashenko, S. Yu. Bounded convergence of series in the Walsh system. (Russian) **85a:42036**
- Quak, Tong Seng (with Yap, Leonard Y. H.) Fourier transforms of Lipschitz functions and Fourier multipliers on compact groups. **85h:43004**
- Stanton, R. J. See Gilbert, J. E.; et al. **85j:22026**
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- Williams, Floyd L. See Fischer, Hans R.; et al. **85m:58172**
- Yap, Leonard Y. H. See Quak, Tong Seng, **85h:43004**

## 43A77 Analysis on general compact groups

- Helman, Barbara Fourier coefficients of continuous functions on compact groups. **85a:43006**

## secondary classifications (43A77)

- Johnson, B. E. A proof of the translation invariant form conjecture for  $L^2(G)$ . **85i:43003**
- Ward, J. A. Closed ideals of homogeneous algebras. **85i:43006**

## 43A80 Analysis on other specific Lie groups [See also 22E30.]

- Delorme, Patrick Multipliers for the convolution algebra of left and right  $K$ -finite compactly supported smooth functions on a semisimple Lie group. **85i:43017**
- Celler, D. (with Stein, E. M.) Estimates for singular convolution operators on the Heisenberg group. **85h:43009**
- Stein, E. M. See Celler, D., **85h:43009**

## secondary classifications (43A80)

- Arthur, James Multipliers and a Paley-Wiener theorem for real reductive groups. **85f:22014**
- Brummelhuis, Raymond (with Koornwinder, T. H.) The generalized Abel transform for  $SL(2, \mathbb{C})$ . **85i:22021**
- Chang, Heather Willow Character relations between singular holomorphic representations. **85j:22027**
- Cowling, Michael G. Harmonic analysis on some nilpotent Lie groups (with application to the representation theory of some semisimple Lie groups). **85i:22012**
- De Cannière, Jean Unbounded approximate units of the Fourier algebra of  $SO_e(n, 1)$ . **85i:22013**
- Greenleaf, Allan Pointwise convergence of singular convolution operators. **85f:22010**
- Hebecker, Hans-Martin (with Schempp, Walter) Radar detection, quantum mechanics, and nilpotent harmonic analysis. **85k:78021**
- Koornwinder, T. H. See Brummelhuis, Raymond, **85i:22021**
- Nghiêm Xuân Hải La transformation de Fourier-Plancherel analytique des groupes de Lie. I. Algèbres de Weyl et opérateurs différentiels. [The analytic Fourier-Plancherel transform of Lie groups. I. Weyl algebras and differential operators] **85k:22020a**
- La transformation de Fourier-Plancherel analytique des groupes de Lie. II. Les groupes nilpotents. (English summary) [The analytic Fourier-Plancherel transform of Lie groups. II. Nilpotent groups] **85k:22020b**
- Schempp, Walter See Hebecker, Hans-Martin, **85k:78021**
- Sevast'yanov, L. A. An analogue of the Paley-Wiener theorem for metabelian Lie groups. (Russian. English summary) **85h:22013**

## 43A85 Analysis on homogeneous spaces

- Ahern, Patrick R. (with Johnson, Kenneth D.) Differentiability criteria and harmonic functions on  $B^n$ . **85f:43016**
- Atrapetyan, R. G. (with Gel'fand, I. M.; Graev, M. I.; Oganessian, G. R.) Plancherel's formula for an integral transformation connected with a complex of straight lines intersecting an algebraic curve in  $\mathbb{C}^3$  and  $\mathbb{CP}^3$ . (Russian. Armenian summary) **85e:43016**
- Bengtson, Thomas E. Bessel functions on  $P_n$ . **85b:43004**
- Bondiol, Cristiana A Paley-Wiener theorem for ultradifferentiable functions on a symmetric space. **85i:43018**
- Cassaniga, Franco (with Giacalone, Ermanno) Hardy's inequality for compact symmetric spaces. (Italian summary) **85d:43007**
- Eymard, Pierre Transfert des fonctions harmoniques et fonctions propres de l'opérateur de Laplace-Beltrami. [Transfer of harmonic functions and eigenfunctions of the Laplace-Beltrami operator] **85b:43006**
- Faraut, J. Un théorème de Paley-Wiener pour la transformation de Fourier sur un espace riemannien symétrique de rang un. [A Paley-Wiener theorem for the Fourier transform on a Riemannian symmetric space of rank one] **85h:43010**
- Gel'fand, I. M. See Atrapetyan, R. G.; et al. **85e:43016**
- Giacalone, Ermanno See Cassaniga, Franco, **85d:43007**
- Graev, M. I. See Atrapetyan, R. G.; et al. **85e:43016**
- Helgason, S. ★ Преобразование Радона. (Russian) [The Radon transform] **85e:43017**
- Topics in geometric Fourier analysis. **85k:43010**
- Heyer, H. Transient Feller semigroups on certain Gel'fand pairs. **85a:43009**
- Johnson, Kenneth D. See Ahern, Patrick R., **85f:43016**
- Kamzolov, A. I. The Bohr-Favard inequality for functions on compact symmetric spaces of rank 1. (Russian) **85d:43008**
- Korányi, Adam Generalized notions of harmonic functions: symmetric spaces. (Italian summary) **85d:43009**
- Nivina, T. A. Expansion of a quasiregular representation on the Lobachevskii plane of a dual variable. (Russian) **85e:43018**
- Oganessian, G. R. See Atrapetyan, R. G.; et al. **85e:43016**
- Sano, Shigeru Invariant spherical distributions and the Fourier inversion formula on  $GL(n, \mathbb{C})/GL(n, \mathbb{R})$ . **85h:43011**
- (Sergeev, A. G.) See Helgason, S., **85e:43017**
- Shitikov, I. I. The Poisson transform on an imaginary Lobachevskii plane. (Russian) **85e:43019**
- Sitaram, Alladi Some remarks on measures on noncompact semisimple Lie groups. **85i:43019**
- (Vladimirov, V. S.) See Helgason, S., **85e:43017**

## secondary classifications (43A85)

- Atrapetyan, R. G. (with Gel'fand, I. M.; Graev, M. I.; Oganessian, G. R.) Plancherel's theorem for the integral transformation connected with a complex of  $p$ -dimensional planes in  $\mathbb{CP}^n$ . (Russian) **85a:53055**
- Bannai, Eiichi (with Blokhuis, A.; Seidel, J. J.; Delsarte, Ph.) An addition formula for hyperbolic space. **85m:52006**
- Berenstein, Carlos A. (with Shahshahani, Mehrdad) Harmonic analysis and the Pompeiu problem. **85d:32061**
- Blokhuis, A. See Bannai, Eiichi; et al. **85m:52006**
- Cartwright, Donald I. (with Sordi, Paolo M.) Best conditions for the norm convergence of Fourier series. **85a:42017**
- Choucrour, Francis Analyse harmonique sur le groupe des automorphismes d'un arbre homogène et applications aux groupes libres. (English summary) [Harmonic analysis on the automorphism group of a homogeneous tree and applications to free groups] **85e:22025**
- Colsani, Leonardo Lipschitz spaces on compact rank one symmetric spaces. **85f:46061**
- Delsarte, Ph. See Bannai, Eiichi; et al. **85m:52006**
- Drury, S. W.  $L^p$  estimates for the X-ray transform. **85b:44004**
- Ehrenpreis, Leon Conformal geometry. **85f:53017**
- Faraut, J. Algèbres de Volterra de certains espaces affines symétriques. [Volterra algebras of certain affine symmetric spaces] **85e:44001**

- Gelfand, I. M. (with Smel'ev, G. S.) Geometric structures of double fibrations and their connection with certain problems of integral geometry. (Russian) **85f:53061**  
 (with Graev, M. I.; Roqu, R.) The problem of integral geometry for  $p$ -dimensional planes in real projective space (the nonlocal variant). **85g:53083**  
*See also Alrapetyan, R. G.; et al., 85a:53055*
- Gilbert, J. E. (with Tomas, P. A.; Kunze, R. A.; Stanton, R. J.) Higher gradients and representations of Lie groups. **85k:22032**
- Głowacki, Paweł On commutative approximate identities on nongraded homogeneous groups. **85m:22011**
- Graev, M. I. *See Alrapetyan, R. G.; et al., 85a:53055 and Gelfand, I. M.; et al., 85g:53083*
- Helgason, S. The range of the Radon transform on a symmetric space. (See **85d:22001**)
- Hulanicki, A. (with Jenkins, J. W.) Almost everywhere summability on nilmanifolds. **85f:22011**
- Iossi, Alessandra (with Picardello, Massimo A.) Spherical functions on symmetric graphs. **85c:43009**
- Jenkins, J. W. *See Hulanicki, A., 85f:22011*
- Johnson, Kenneth D. Generalized Hua-operators and parabolic subgroups. The cases of  $SL(n, \mathbb{C})$  and  $SL(n, \mathbb{R})$ . **85d:22030**
- Kengmana, Thongchai Characters of the discrete series for pseudo-Riemannian symmetric spaces. (See **85d:22001**)
- Kunze, R. A. *See Gilbert, J. E.; et al., 85k:22032*
- Lassalle, Michel Systèmes triples de Jordan,  $R$ -espaces symétriques et équations de Hua. (English summary) [Jordan triple systems, symmetric  $R$ -spaces and Hua equations] **85f:32057**  
 Les équations de Hua d'un domaine borné symétrique du type tube. [Hua equations for a bounded symmetric domain of tube type] **85m:32033**  
 Sur la valeur au bord du noyau de Poisson d'un domaine borné symétrique. [Boundary value of the Poisson kernel of a symmetric bounded domain] **85m:32034**
- Long, Rui Lin (with Yang, Le) BMO functions in spaces of homogeneous type. **85m:42022**
- Mneimné, Rachid Équation de la chaleur sur un espace riemannien symétrique et formule de Plancherel. (English summary) [The heat equation on a Riemannian symmetric space and the Plancherel formula] **85f:22012**
- Molchanov, V. F. Orbits of a stationary subgroup on a pseudo-Riemannian symmetric space of rank 1. (Russian) **85c:53083**
- Oganesyan, G. R. *See Alrapetyan, R. G.; et al., 85a:53055*
- Picardello, Massimo A. *See Iossi, Alessandra, 85c:43009*
- Roqu, R. *See Gelfand, I. M.; et al., 85g:53083*
- Rouvière, François Sur la transformation d'Abel des groupes de Lie semisimples de rang un. (English summary) [The Abel transform of semisimple Lie groups of rank one] **85d:22025**
- Saxe, Michael B. (with Sherman, Thomas O.) Hilbert and Fourier transforms on a sphere. **85j:58145**
- Seidel, J. J. *See Bannai, Eiichi; et al., 85m:52006*
- Shahshahani, Mehrdad *See Berenstein, Carlos A., 85d:32061*
- Shamava, I. M. Inversion of the operator of integration of functions over planes in spaces over the quaternions. (Russian) **85c:53091**
- Sherman, Thomas O. *See Saxe, Michael B., 85j:58145*
- Shitikov, I. I. The Poisson transform on an imaginary Lobachevskii space. (Russian) **85k:22025**
- Smel'ev, G. S. *See Gelfand, I. M., 85f:53061*
- Soardi, Paolo M. *See Cartwright, Donald I., 85a:42017*
- Stanton, R. J. *See Gilbert, J. E.; et al., 85k:22032*
- Strichartz, Robert S. Mean value properties of the Laplacian via spectral theory. **85h:31008**
- Tomas, P. A. *See Gilbert, J. E.; et al., 85k:22032*
- Unterberger, André Symbolic calculi and the duality of homogeneous spaces. **85h:58166**
- Varadarajan, V. S. Asymptotic properties of eigenvalues and eigenfunctions of invariant differential operators on symmetric and locally symmetric spaces. **85m:58183**
- Yang, Le *See Long, Rui Lin, 85m:42022*
- Zhong, Jia Qing The Siegel-Godement transformations on positive Hermitian cones. (Chinese) **85c:32040**

#### 43A90 Spherical functions [See also 22E45, 22E46.]

- Iossi, Alessandra (with Picardello, Massimo A.) Spherical functions on symmetric graphs. **85c:43009**
- Picardello, Massimo A. *See Iossi, Alessandra, 85c:43009*
- Tadić, M. Harmonic analysis of spherical functions on reductive groups over  $p$ -adic fields. **85d:43010**

#### secondary classifications (43A90)

- van den Ban, E. P. Asymptotic behaviour of Eisenstein integrals. **85g:22017**
- Dunkl, Charles F. An addition theorem for Heisenberg harmonics. **85f:33018**
- Falconer, K. J. Applications of a result on spherical integration to the theory of convex sets. **85f:52012**
- Heyer, H. Transient Feller semigroups on certain Gelfand pairs. **85a:43009**
- Kawazoe, Takeshi Summability theorem on real rank 1 semisimple Lie groups. **85d:22023**
- Markett, C. Cohen type inequalities for Jacobi, Laguerre and Hermite expansions. **85d:42025**
- Picardello, Massimo A. Spherical functions and local limit theorems on free groups. (Italian summary) **85f:60017**
- Schempp, Walter Drei statt einer reellen Variablen? (English summary) [Three real variables instead of one?] **85i:41009**
- Sjögren, Peter Fatou theorems and maximal functions for eigenfunctions of the Laplace-Beltrami operator in a bidisk. **85k:22026**

#### 43A99 Miscellaneous topics

##### secondary classifications (43A99)

- Bănuțescu, Martha Potentials on locally compact nonabelian groups. **85j:31007**  
 Potentials on locally compact nonabelian groups. **85j:31008**
- Barbey, Klaus Periodically invariant linear systems. **85a:93011**
- Cerna, Florin Ovidiu On the Riesz decomposition of bi-excessive measures on locally compact groups. **85k:31011**
- Cuthkosky, R. E. Harmonic functions and matrix elements for hyperspherical quantum field models. **85j:81025**
- Dainotiyewi, Heneri A. Murima (with van Rooij, Arnold C. M.) Non-Archimedean harmonic analysis on topological semigroups. **85e:11054**
- Glinther, P. The Poisson formula for Euclidean space groups and some of its applications. I. (German and Russian summaries) **85j:22018**
- Gurevich, D. I. Generalized translation operators on Lie groups. (Russian. English and Armenian summaries) **85h:22015**
- van Rooij, Arnold C. M. *See Dainotiyewi, Heneri A. Murima, 85e:11054*

#### 44-XX INTEGRAL TRANSFORMS, OPERATIONAL CALCULUS

(For fractional derivatives and integrals, see 26A33. For numerical methods, see 65R10.)

##### secondary classifications (44-XX)

- Kalla, S. L. *See Raina, R. K., (Not in MR)*
- Raina, R. K. (with Kalla, S. L.) On moments of probability distribution functions and  $H$ -function transform. (Spanish summary) (Not in MR)

#### 44-01 Elementary exposition; textbooks

- Ditkin, V. A. (with Prudnikov, A. P.) ★ Transformations intégrales et calcul opérationnel. (French) [Integral transforms and operational calculus] **85a:44001**  
 (with Prudnikov, A. P.) ★ Calcul opérationnel. (French) [Operational calculus] **85a:44002**
- (Embarek, Djilali) *See Ditkin, V. A., 85a:44001 and 85a:44002*
- Meister, E. ★ Integraltransformationen mit Anwendungen auf Probleme der mathematischen Physik. (German) [Integral transforms with applications to problems of mathematical physics] **85d:44001**
- Prudnikov, A. P. *See Ditkin, V. A., 85a:44001 and 85a:44002*

##### secondary classifications (44-01)

- Kiselev, A. I. *See Krasnov, M. L.; et al., 85a:00006*
- Krasnov, M. L. (with Kiselev, A. I.; Makarenko, G. I.) ★ Funciones de variable compleja. Cálculo operacional. Teoría de la estabilidad. (Spanish) [Functions of a complex variable. Operational calculus. Stability theory] **85a:00006**
- Makarenko, G. I. *See Krasnov, M. L.; et al., 85a:00006*
- (Shapovalova, T. L.) *See Krasnov, M. L.; et al., 85a:00006*

#### 44-02 Advanced exposition (research surveys, monographs, etc.)

- Brychkov, Yu. A. (with Glaeske, Hans-Jürgen; Marichev, O. I.) Factorization of integral transformations of convolution type. (Russian) **85g:44001**
- Glaeske, Hans-Jürgen *See Brychkov, Yu. A.; et al., 85g:44001*
- Marichev, O. I. *See Brychkov, Yu. A.; et al., 85g:44001*

#### 44-03 Historical (must also be assigned at least one classification number from Section 01)

##### secondary classifications (44-03)

- Berndt, Bruce C. Ramanujan's quarterly reports. **85j:01021**
- Bukhshtaber, V. M. (with Gindikin, S. G.) From Cavalieri's principle to the tomograph. (Bulgarian) **85e:01032**
- (Cavalleri, Bonaventura) *See Bukhshtaber, V. M., 85e:01032*
- Erugin, N. P. (with Val'ev, K. G.) Operational calculus. (Russian) (See **85g:01004**)
- Gindikin, S. G. *See Bukhshtaber, V. M., 85e:01032*
- (Penkov, I.) *See Bukhshtaber, V. M., 85e:01032*
- Val'ev, K. G. *See Erugin, N. P., (85g:01004)*

#### 44A05 General transforms [See also 42A38.]

- Handa, S. On multidimensional integral transforms. (Hindi. English summary) **85h:44001**
- Narain, Ram *See Prasad, Y. N., 85h:44002*
- Prasad, Y. N. (with Narain, Ram) On a generalized integral transform involving a product of two multivariable  $H$ -functions as kernel. (Turkish summary) **85h:44002**

##### secondary classifications (44A05)

- Andersen, Kenneth F. (with Heinig, H. P.) Weighted norm inequalities for certain integral operators. **85f:26012**
- Basañez, L. (with Batle Nicolau, Nadal; Ferraté, G.; Grané Manlleu, José; Trillas, E.) A first mathematical approach to E-transform. **85h:94002**
- Batle Nicolau, Nadal *See Basañez, L.; et al., 85h:94002*
- Carroll, Robert Wayne Partial differential equation techniques in transmutation. **85j:35202**
- Daly, Charles J. A finite integral transform (FIT) method for differential equations having asymptotic solutions. (See **85b:90006**)
- Davison, Mark E. The ill-conditioned nature of the limited angle tomography problem. **85a:92008**



- Ferrati, G. See Bassani, L.; et al., 85b:94002  
 Grand Manliou, José See Bassani, L.; et al., 85b:94002  
 Heinig, H. P. See Andersen, Kenneth F., 85b:94002  
 Trillas, E. See Bassani, L.; et al., 85b:94002

## 44A10 Laplace transform

- Benedetto, John J. (with Heinig, H. P.) Weighted Hardy spaces and the Laplace transform. 85j:44001  
 Beregovskiy, G. Ya. (with Pukhov, G. E.) ★Сретенчатые изображения и их применение. (Russian) [Step-mappings and their application] 85i:44001  
 Buschman, R. G. Heat transfer between a fluid and a plate: multidimensional Laplace transformation methods. 85b:44001  
 Dahlya, R. S. Calculation of two-dimensional Laplace transform pairs. II. 85b:44003  
 Eberl, W., Jr. A class of Laplace transforms and their inversion. 85b:44003  
 Fedchina, I. P. A development of P. L. Chebyshev's estimate, connected with the Laplace integral. (Russian) 85b:44003  
 Gestafon, S.-A. Computing Fourier and Laplace transforms by means of power series evaluation. (See 85g:90034)  
 Heinig, H. P. See Benedetto, John J., 85j:44001  
 Joshi, J. M. C. See Joshi, N., 85i:44002  
 Joshi, N. (with Joshi, J. M. C.) On  $n$ -dimensional Laplace transformation. 85i:44002  
 Kaczorek, T. Inverse problem for generalized Laplace transform. (Russian summary) (Not in MR)  
 Koranne, V. D. (with Saxena, Rajendra Kumar) Laplace transform and self-reciprocal functions of two variables. 85b:44001  
 Ono, Takashi On a generalization of Laplace integrals. 85d:44002  
 Poberezhnyi, O. V. Application of biorthogonal expansions for inversion of the Laplace transform. (Russian) 85i:44003  
 Pukhov, G. E. See Beregovskiy, G. Ya., 85i:44001  
 Pyanylo, Ya. D. Investigation of approximate inversion of the Laplace transform by means of Jacobi polynomials. (Russian) 85i:44004  
 Rao, G. L. N. A unification of generalizations of the Laplace transform and generalized functions. 85c:44001  
 Sadykhov, V. E. Asymptotic equalities for double Laplace integrals with a quasihomogeneous kernel. (Russian. Macedonian summary) 85i:44005  
 Saxena, Rajendra Kumar See Koranne, V. D., 85b:44001  
 Valité, Robert Generalized Laplace transform with matrix argument, actualization and systems theory. (Russian summary) (Not in MR)  
 Yadava, S. R. On two-dimensional Laplace transform. 85b:44002

## secondary classifications (44A10)

- Amerbaev, V. M. (with Utembaev, N. A.) ★Численный анализ лагранжевского спектра. [Numerical analysis of the Laguerre spectrum] 85d:85002  
 Bales, W. (with Jurkat, W. B.; Lutz, D. A.) Transfer of connection problems for first level solutions of meromorphic differential equations, and associated Laplace transforms. 85c:34006  
 Buschman, R. G. (with Noble, R. D.) Laplace transformation methods for some heat transfer problems. 85f:90004  
 Chebotarev, A. M. A formula for the second term of the logarithmic asymptotic expansion of Laplace integrals. (Russian) 85i:41029  
 Devreese, J. T. See Peeters, F. M., 85m:52035  
 Faraut, J. Algèbres de Volterra de certains espaces affines symétriques. [Volterra algebras of certain affine symmetric spaces] 85c:44001  
 Ghosh, D. K. (with Sinha, M. R.; Talukdar, B.) Laplace transform method for scattering on Coulomb plus nonlocal separable potentials. 85b:81188  
 Goleš, I. See Neamtu, N. N., 85b:39002  
 Gupta, L. C. Integrals involving Bessel functions. 85b:33007  
 Jurkat, W. B. See Bales, W.; et al., 85c:34006  
 Loseva, N. V. Application of a multidimensional Laplace transform for solution of a nonstationary Riccati equation. (Russian) 85j:34005  
 Lutz, D. A. See Bales, W.; et al., 85c:34006  
 Neamtu, N. N. (with Goleš, I.) Application of the Laplace transform in the solution of discrete integral equations. (Romanian. English summary) 85b:39002  
 Noble, R. D. See Buschman, R. G., 85f:90004  
 Peeters, F. M. (with Devreese, J. T.) Upper bounds for the free energy. A generalisation of the Bogolubov inequality and the Feynman inequality. 85m:82035  
 Poberezhnyi, O. V. See Pyanylo, Ya. D., 85b:85264  
 Pyanylo, Ya. D. (with Poberezhnyi, O. V.) The error of approximate inversion of the Laplace transform by means of Jacobi polynomials. (Russian) 85b:85264  
 Ryabov, V. M. Numerical methods of inversion of the Laplace transform. (Russian) 85b:85112

Estimate of the error of quadrature formulas for inversion of the Laplace transform, connected with Padé approximations of the function  $e^x$ . (Russian. English summary) 85b:85265

- Sinha, M. R. See Ghosh, D. K.; et al., 85b:81188  
 Souk, K. A note on uniform asymptotic expansion of incomplete Laplace integrals. 85a:41038  
 Suveika, I. V. ★Табуровы теоремы и их приложение в анализе и математической физике. (Russian) [Tauberian theorems and their application in analysis and mathematical physics] 85f:35098  
 Talukdar, B. See Ghosh, D. K.; et al., 85b:81188  
 Temme, Nico M. Uniform asymptotic expansions of Laplace integrals. 85j:41059  
 Tudor, Gh. M. See Tudor, V., 85j:94002  
 Tudor, V. (with Tudor, Gh. M.) Une formule utile pour le calcul des images de quelques fonctions originales. (Romanian summary) [A formula for calculating the images of some original functions] 85j:94002  
 Utembaev, N. A. See Amerbaev, V. M., 85d:85002  
 Wells, Charles E. On the use of integral transform methods: a new perspective. (Not in MR)

## 44A15 Special transforms (Legendre, Hilbert, etc.)

- Boman, Jan On the closure of spaces of sums of ridge functions and the range of the X-ray transform. (French summary) 85j:44002  
 Bourgain, J. Sur les sommes de sinus. [Sine sums] 85d:44003  
 Boyd, J. N. (with Raychowdhury, P. N.) Definite integrals from generating functions. 85c:44002  
 Costabel, Martin Boundary integral operators on curved polygons. 85m:44001  
 Droste, Bernd A new proof of the support theorem and the range characterization for the Radon transform. 85b:44003  
 Drury, S. W.  $L^p$  estimates for the X-ray transform. 85b:44004  
 Generalizations of Riesz potentials and  $L^p$  estimates for certain  $k$ -plane transforms. 85b:44004  
 Dwivedi, B. N. See Singh Chandel, R. C., 85d:44005  
 Faraut, J. Algèbres de Volterra de certains espaces affines symétriques. [Volterra algebras of certain affine symmetric spaces] 85c:44001  
 Fenyő, István Some remarks on the theory of the Laguerre-Pinney transformation. 85c:44003  
 Finch, David V. (with Solmon, Donald C.) A characterization of the range of the divergent beam x-ray transform. 85g:44002  
 Frontini de Battig, N. E. (with Kalla, S. L.) On operational calculus. (Spanish) 85m:44002  
 Glasser, M. L. Some useful properties of the Hilbert transform. 85k:44001  
 Gupta, L. C. Theorems in operational calculus. 85b:44005  
 Haimo, Deborah Tepper Inversion and representation for the Poisson-Laguerre transform. 85b:44006  
 Kalla, S. L. (with Villalobos, Alfredo) On a new integral transform. II. (Spanish) 85d:44004  
 See also Frontini de Battig, N. E., 85m:44002  
 Krajewski, Jacek (with Oleśiak, Z.) Associated Weber integral transforms of  $W_{\nu-1,\nu}[\cdot; \cdot]$  and  $W_{\nu-2,\nu}[\cdot; \cdot]$  types. (Russian summary) 85g:44003  
 Lall, A. B. B. See Verma, T. N., 85c:44005  
 Louis, Alfred K. Orthogonal function series expansions and the null space of the Radon transform. 85j:44003  
 Luther, Wolfram Abelian and Tauberian theorems for a class of integral transforms. 85g:44004  
 Madych, W. R. (with Nelson, S. A.) Approximate inversion formulas for Radon transform data. (See 85g:41002)  
 Malgoude, S. P. (with Saxena, Rajendra Kumar) Some abelian theorems for the distributional  $H$ -transformation. 85b:44007  
 Mizony, Michel Une transformation de Laplace-Jacobi. (English summary) [A Laplace-Jacobi transformation] 85c:44002  
 Nasim, Cyril The Mehler-Fock transform of general order and arbitrary index and its inversion. 85m:44003  
 Naveit, H. On the Hankel transform of a generalized Laguerre polynomial and on the convolution involving special Bessel functions. 85j:44004  
 Nelson, S. A. See Madych, W. R., (85g:41002)  
 Oberlin, Daniel M.  $L^p - L^q$  mapping properties of the Radon transform. 85j:44005  
 Okikolu, G. O. Operators expressible as Hilbert transform multipliers. 85c:44003  
 Oleśiak, Z. See Krajewski, Jacek, 85g:44003  
 Poruchikov, V. B. (with Rappoport, Yu. M.) Inversion formulas for modified Kontorovich-Lebedev integral transformations. (Russian) 85h:44008  
 Quinto, Eric Todd Null spaces and ranges for the classical and spherical Radon transforms. 85c:44004  
 Raina, R. K. On composition of certain fractional integral operators. 85b:44009  
 Rappoport, Yu. M. See Poruchikov, V. B., 85h:44008  
 Raychowdhury, P. N. See Boyd, J. N., 85c:44002  
 Saxena, Rajendra Kumar See Malgoude, S. P., 85b:44007  
 Singh Chandel, R. C. (with Dwivedi, B. N.) Multidimensional Whittaker transforms. 85d:44005  
 Solmon, Donald C. See Finch, David V., 85g:44002  
 Suprun, D. G. Generalization of the Carathéodory transformation. (Russian) 85j:44006  
 Takachi, Arpad A note on the distributional Stieltjes transformation. 85d:44006  
 Vance, James  $L^p$ -boundedness of the multiple Hilbert transform along a surface. 85h:44010  
 Verma, T. N. (with Lall, A. B. B.) A convolution formula for the distributional Laguerre transform. 85c:44005  
 Villalobos, Alfredo See Kalla, S. L., 85d:44004

## secondary classifications (44A15)

- Askey, Richard (with Ismail, Mourad) Recurrence relations, continued fractions, and orthogonal polynomials. 85g:33008  
 Atencia, E. (with Martín-Reyes, F. J.) The maximal ergodic Hilbert transform with weights. 85c:28025  
 Barrett, Harrison H. See Clough, Anne V., 85c:92008  
 Boyadshiev, L. I. On the representation of entire functions by series of Laguerre polynomials. 85g:30042  
 Brack, F. (with Delanghe, Richard; Sommen, F.) ★Clifford analysis. 85j:30103  
 Burkholder, D. L. A geometric condition that implies the existence of certain singular integrals of Banach-space-valued functions. 85i:42020  
 Chaudhry, Muhammad Aslam See Pandey, J. N., 85d:48058  
 Clough, Anne V. (with Barrett, Harrison H.) Attenuated Radon and Abel transforms. 85c:92008  
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 Crimmins, T. R. (with Fienup, J. R.) Uniqueness of phase retrieval for functions with sufficiently disconnected support. 85b:42005  
 Dagman, E. E. (with Kukharev, G. A.) ★Быстрые дискретные ортогональные преобразования. (Russian) [Fast discrete orthogonal transformations] 85h:94005

- Daubechies, I. (with Grossmann, A.; Reigner, J.) An integral transform related to quantization. II. Some mathematical properties. **85g:81061**
- Delanghe, Richard. See Brackx, F.; et al., **85j:30103**
- Fienup, J. R. See Crimmins, T. R., **85b:42005**
- Glasser, M. L. On some integrals arising in mathematical physics. **85i:33004**
- Grossmann, A. See Daubechies, I.; et al., **85g:81061**
- Gustafson, S.-A. Computing Fourier and Laplace transforms by means of power series evaluation. (See **85g:00024**)
- Helgason, S. ★ Преобразование Радона. (Russian) [The Radon transform] **85e:43017**
- Ismail, Mourad. See Askey, Richard, **85g:33008**
- Jörcke, Burglind (with Khavin, V. P.) Letter to the editors: "The indeterminacy principle for operators that commute with a shift." [Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI) **92** (1979), 134-170; MR **81e:42021**]. (Russian) **85e:42015**
- Khavin, V. P. See Jörcke, Burglind, **85e:42015**
- Kolesov, E. T. (with Yakovlev, Yu. S.) Solution of integral equations of the first kind with a kernel in the form of a generalized hypergeometric function. (Russian) **85e:45001**
- Koranne, V. D. (with Saxena, Rajendra Kumar) Laplace transform and self-reciprocal functions of two variables. **85b:44001**
- Kriekels, Basil C. Weighted  $L^p$  estimates for the Cauchy integral operator. **85h:42023**
- Kukharev, G. A. See Dagman, E. E., **85h:94005**
- Landau, E. On the representation of Bergman-Vekua-operators for three-dimensional equations. (German and Russian summaries) **85k:35029**
- Ling, Rina. Reducing increasing monotonicity of kernels. **85g:45018**
- Madych, W. R. (with Nelson, S. A.) Polynomial based algorithms for computed tomography. II. **85k:92015**
- Martin-Reyes, F. J. See Atencia, E., **85e:28025**
- Martirosyan, V. M. A new proof of M. M. Dzhrbashyan's theorem on parametric representation of general classes of entire functions of finite order. (Russian. English and Armenian summaries) **85m:30020**
- McClure, J. P. See Wong, Roderick, **85j:41061**
- Meng, Da Zhi. A direct method for  $n$ -dimensional FFT and FST. (Chinese. English summary) **85g:42018**
- Nashed, M. Zubair. Continuous and semicontinuous analogues of iterative methods of Cimmino and Kaczmarz with applications to the inverse Radon transform. **85k:85029**
- Nelson, S. A. See Madych, W. R., **85k:92015**
- Neval, Paul. Mean convergence of Lagrange interpolation. III. **85c:41009**
- Pandey, J. N. (with Chaudhry, Muhammad Aslam) The Hilbert transform of generalized functions and applications. **85d:46058**
- Pilipović, Stevan. An analytic characterization of the space of generalized functions which have a Laguerre expansion. (Serbo-Croatian summary) **85f:46081**
- Rafi, Mohammed. A generalized Weierstrass transform  $\omega_\lambda$  of a class of generalized functions. **85f:46082**
- Reigner, J. See Daubechies, I.; et al., **85g:81061**
- Sadosky, Cora. See Cotlar, Mischa, **85i:42015**
- Saitoh, Saburo. Fourier transforms with weighted functions and the Green's functions. **85j:42015**
- Saxe, Michael B. (with Sherman, Thomas O.) Hilbert and Fourier transforms on a sphere. **85j:58145**
- Saxena, Rajendra Kumar. See Koranne, V. D., **85b:44001**
- Schempp, Walter. ★ Complex contour integral representation of cardinal spline functions. **85c:41020**
- (Sergeev, A. G.) See Helgason, S., **85e:43017**
- Sherman, Thomas O. See Saxe, Michael B., **85j:58145**
- Shitkov, I. I. The Poisson transform on an imaginary Lobachevskii plane. (Russian) **85e:43019**
- Sommen, F. See Brackx, F.; et al., **85j:30103**
- Stens, R. L. A unified approach to sampling theorems for derivatives and Hilbert transforms. (French and German summaries) **85g:42015**
- Strichartz, Robert S. Singular integrals supported on submanifolds. **85c:42019**
- Sundaram, Kokila. Inversion theorem for the Whittaker-transform of certain distributions. **85f:46083**
- Treil, S. R. The geometric approach to weight estimates of the Hilbert transform. (Russian) **85c:42012**
- Verdiev, I. A. An integral transformation in Lobachevsky space. **85c:81018**
- (Vladimirov, V. S.) See Helgason, S., **85e:43017**
- Wong, Roderick (with McClure, J. P.) Generalized Mellin convolutions and their asymptotic expansions. **85j:41061**
- Yadava, S. R. On two-dimensional Laplace transform. **85b:44002**
- Yakovlev, Yu. S. See Kolesov, E. T., **85e:45001**

## 44A20 Transforms of special functions

- Glaeske, Hans-Jürgen. On a convolution structure of a generalized Hermite transformation. **85i:44006**
- Kalla, S. L. See Nieve de del Pino, M. E., **85g:44005**
- Leach, P. G. L. Laplace transforms of Airy functions via their integral definitions. **85f:44004**
- Nath, K. See Prasad, Y. N., **85i:44007**
- Nieve de del Pino, M. E. (with Kalla, S. L.) Fractional integration operators involving the function  $H$  of two variables. II. (Spanish. English summary) **85g:44005**
- Prasad, Y. N. (with Nath, K.) On a generalized multidimensional integral transform involving a product of two multivariable  $H$ -functions as kernel and its inversion formula. (Turkish summary) **85i:44007**
- Rooney, P. G. A generalization of the conjugate Hankel operator. **85b:44005**

secondary classifications (44A20)

- Dahiya, R. S. The two-dimensional Laplace transform for  $H$ -functions. **85d:33011**

Calculation of two-dimensional Laplace transform pairs. II. **85h:44003**

- Malgoude, S. P. (with Saxena, Rajendra Kumar) Some abelian theorems for the distributional  $H$ -transformation. **85h:44007**
- Nath, K. See Prasad, Y. N., **85i:44007**
- Prasad, Y. N. (with Nath, K.) Some theorems on the generalized multidimensional integral transform involving a product of two multivariable  $H$ -functions. (Hindi. English summary) **85i:44008**
- Saxena, Rajendra Kumar. See Malgoude, S. P., **85h:44007**
- Zăgărescu, M. The elliptic parametrization of the group  $SO(3)$  and of the automorphisms  $E, S$ . **85h:22012**

## 44A30 Multiple transforms

- Nath, K. See Prasad, Y. N., **85i:44007**
- Prasad, Y. N. (with Nath, K.) Some theorems on the generalized multidimensional integral transform involving a product of two multivariable  $H$ -functions. (Hindi. English summary) **85i:44008**

## 44A35 Convolution

- Boshinov, N. S. On a class of  $(L^1, L^1)$ -multipliers, commutants and convolutions connected with the differentiation operator and real Dirichlet expansions. **85h:44011**
- On some approximation properties and multipliers of Berg-Dimovski convolution for the differentiation. **85j:44007**
- Gauthier, Claude. Sur les puissances convolutives des fonctions. [Convolution powers of functions] **85i:44009**
- Matsuura, Shigetake. See Yosida, Kōsaku, **85i:44010**
- Nguyễn Thị Thiên Hoa. An extremal problem for classes of convolutions that do not increase variation. (Russian. English summary) **85f:44005**
- Petrova, R. I. Convolution and operational properties of a finite integral transformation connected with boundary value problems of the third kind. (Russian. English and Bulgarian summaries) (Not in MR)
- Yosida, Kōsaku (with Matsuura, Shigetake) A note on Mikusiński's proof of the Titchmarsh convolution theorem. **85i:44010**

secondary classifications (44A35)

- Articolo, G. A. Sturm-Liouville transforms: the singular sine and cosine. **85f:34071**
- Bertelsen, J. V. A theorem on the convolution of isotropic functions, with application to the Percus-Yevick equation. **85k:82031**
- Brychkov, Yu. A. (with Glaeske, Hans-Jürgen; Marichev, O. I.) Factorization of integral transformations of convolution type. (Russian) **85g:44001**
- Chanillo, Sagun (with Kurtz, Douglas S.; Sampson, G.) Weighted  $L^p$  estimates for oscillating kernels. **85k:42034**
- Glaeske, Hans-Jürgen. See Brychkov, Yu. A.; et al., **85g:44001**
- Jiang, Zeng Rong. Polynomial transforms and their applications in the computation of convolutions. (Chinese. English summary) **85k:93021**
- Keller, Klaus. Some convergence properties of convolutions. **85h:46059**
- Kurtz, Douglas S. See Chanillo, Sagun; et al., **85k:42034**
- Marichev, O. I. See Brychkov, Yu. A.; et al., **85g:44001**
- Navelet, H. On the Hankel transform of a generalized Laguerre polynomial and on the convolution involving special Bessel functions. **85j:44004**
- Rusak, V. N. Approximation by rational operators of Fourier type of periodic functions representable in convolution form. (Russian. English summary) **85h:41050**
- Sampson, G. See Chanillo, Sagun; et al., **85k:42034**
- Veber, V. K. Passivity of linear systems of differential equations with fractional derivative, and quasiasymptotic behavior of solutions. (Russian) **85c:46037**

## 44A40 Calculus of Mikusiński and other similar operational calculi

- Berger, Gerd. Eine Rekursionsbeziehung für Operatoren, die rechteinvers zu Potenzen  $D = d^2/dx^2$  sind und Randwert-Momenten-Bedingungen genügen. [A recursion relation for operators which are right-invertible to powers of  $D = d^2/dx^2$  and satisfy boundary value moment conditions] **85h:44012**
- Fényes, Tamás (with Kosik, P.) On a system of algebraic differential equations of the operator field. (Hungarian) **85j:44008**
- Kosik, P. See Fényes, Tamás, **85j:44008**
- Malakhovskaya, R. M. ★ Алгебраическое операционное исчисление и его приложения. Часть 1. (Russian) [Algebraic operational calculus and its applications. Part 1] **85g:44006**
- Okamoto, Shuichi. A remark on Yosida's complement to Mikusiński's operational calculus. **85h:44014b**
- Pukhov, G. E. Differential transformations of functions and equations. (Russian) **85h:44013**
- Qiu, Lian Rong. A direct method of operational calculus. I. Research for the solution of second-order linear ordinary differential equations with variable coefficients. **85e:44006**
- Yosida, Kōsaku. A simple complement to Mikusiński's operational calculus. **85h:44014a**

secondary classifications (44A40)

- Berg, L. Taylor's expansion in a distribution algebra. (German and Russian summaries) **85i:46049**
- Kierat, W. Some Fourier transform inversion theorem. **85k:42023**
- Mikusiński, Piotr. Convergence of Boehmians. **85h:46063**
- Praseworska-Rolwicz, D. Conjugate problems for linear systems with right invertible operator. **85k:47021**
- Stanković, Bogoljub. Equation of heat conduction with finite wave speeds. **85d:80004**
- On the impossibility of extending the product of continuous functions to the field of Mikusiński operators. (Serbo-Croatian summary) **85a:26019**
- Tasche, Manfred. Algebraische Operatorenrechnung für einen rechtsinvertierbaren Operator. (English, French and Russian summaries) [Algebraic operator calculus for a right-invertible operator] (Not in MR)

## 44A45 Classical operational calculus

- Brychkov, Yu. A. (with Prudnikov, A. P.) Certain formulas of operational calculus of two variables. 85j:44009  
 Kumara Swamy, Y. S. (with Mathur, S. N.) On  $H$ - $H$  transforms. 85a:44003  
 Mathur, S. N. See Kumara Swamy, Y. S., 85a:44003  
 Prudnikov, A. P. See Brychkov, Yu. A., 85j:44009

secondary classifications (44A45)

- Frontini de Battig, N. E. (with Kalla, S. L.) On operational calculus. (Spanish) 85m:44003  
 Kalla, S. L. See Frontini de Battig, N. E., 85m:44002

## 44A60 Moment problems

- Berg, Christian (with Christensen, Jens Peter Reus) Exponents critiques dans le problème des moments. (English summary) [Critical exponents in the moment problem] 85a:44004  
 Buchwalter, Henri (with Cassier, Gilles) Semi-groupes dans le problème des moments. (English summary) [Moment problem and semigroups] 85a:44005  
 Burton, W. K. See Fliess, George P.; et al., 85g:44009  
 Cassier, Gilles Problème des moments  $n$ -dimensionnel; mesures quasi-spectrales et semi-groupes. [The  $n$ -dimensional moment problem; quasimoment measures and semigroups] 85g:44007  
 Problème des moments sur un compact de  $\mathbb{R}^n$  et décomposition de polynômes à plusieurs variables. [The moment problem on a compact set in  $\mathbb{R}^n$ , and decomposition of polynomials in several variables] 85m:44004  
 See also Buchwalter, Henri, 85a:44005

- Chihara, T. S. Orthogonal polynomials with discrete spectra on the real line. 85i:44011  
 Christensen, Jens Peter Reus See Berg, Christian, 85a:44004  
 Davydov, E. G. (with Ringo, N. I.) Some questions in the theory of the  $L$ -problem of moments. 85g:44006  
 Fliess, George P. (with Burton, W. K.; Whitehead, R. R.) On the moment problem for nonpositive distributions. 85g:44009  
 Fuglede, Bent The multidimensional moment problem. 85g:44010  
 Jones, William B. (with Thron, W. J.; Njåstad, Olav) Orthogonal Laurent polynomials and the strong Hamburger moment problem. 85h:44015  
 Kasyanchuk, A. V. On the question of the determinacy of the moment problems of Stieltjes and Hamburger. (Russian) 85i:44012  
 Longman, I. M. Some aspects of the finite moment problem. 85e:44007  
 Nguyễn Doãn Tín See Nguyen-Xuan-Loc, 85k:44003  
 Nguyen-Xuan-Loc (with Nguyễn Doãn Tín) Invariant properties of moment spaces. 85k:44003  
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 Thron, W. J. See Jones, William B.; et al., 85h:44015  
 Whitehead, R. R. See Fliess, George P.; et al., 85g:44009

secondary classifications (44A60)

- Artemenko, A. P. Hermitian-positive functions and positive functionals. I. (Russian) 85j:42022a  
 Hermitian-positive functions and positive functionals. II. (Russian) 85j:42022b  
 Falconer, K. J. Hammer's X-ray problem and the stable manifold theorem. 85g:52001b  
 X-ray problems for point sources. 85g:52001a  
 Gevorkyan, L. Z. A criterion for subnormality of operators and the power moment problem. (Russian. Armenian summary) 85k:47043  
 Kalyushnyi, V. N. The power moment problem on a  $p$ -adic disk. (Russian) 85b:11077  
 Klotz, Lutz Peter Über schwach meßbare positiv definite Operatorfunktionen. (English summary) [On weakly measurable, positive definite operator functions] 85i:47018  
 Kubyshkin, V. A. Solutions of finite-dimensional nonlinear problem of moments for control problems. 85e:49037  
 Lasser, Rupert On the problem of modified moments. 85b:42011  
 McCabe, J. H. (with Sri Ranga, A.)  $J$  fractions and the strong Hamburger moment problem. (See 85j:41003)  
 Moussa, Pierre Problème diophantien des moments et modèle d'Ising. (English summary) [Diophantine problem of moments and the Ising model] 85j:82008  
 Sebestyén, Zoltán Moment problem for dilatable semigroups of operators. 85d:47009  
 Moment type theorems for  $\ast$ -semigroups of operators on Hilbert space. I. 85d:47008  
 Sri Ranga, A. See McCabe, J. H., (85j:41003)  
 Szafraniec, F. H. Moments on compact sets. 85h:43006  
 Trautner, R. Moment multipliers for power series. (Russian summary) 85i:30001

## 44A99 Miscellaneous topics

- Horea, Banea Sur l'interprétation de l'opérateur de dérivation d'ordre fractionnaire. (Romanian summary) [On the interpretation of the fractional order operator of derivation] (Not in MR)  
 Przeworska-Rolewicz, D. Non-Leibniz algebras. 85e:44006  
 Santucci Patini, Lia A theorem of completeness on the interval  $[0, +\infty]$ . (Italian) 85e:44006

secondary classifications (44A99)

- Al-Salam, N. A. Some operational formulas for the  $q$ -Laguerre polynomials. 85d:33027  
 (Ando, Tsuyoshi) See Kovalishina, I. V., 85e:47019  
 Conlan, James Hyperbolic differential equations of generalized order. 85j:35123  
 Degani Cattelani, Franca Kernels of "distance" type that soften jumps in one or more variables. (Italian) 85h:41054  
 Kiryakova, V. S. See Raina, R. K., 85a:26013  
 Kosarchin, V. M. See Kvrt, I. D., 85f:60027

- Kovalishina, I. V. (with Potapov, V. P.)  $\star$  Integral representation of Hermitian positive functions. 85e:47019  
 Kvrt, I. D. (with Kosarchin, V. M.) Parseval's relation for reflection. (Ukrainian. Russian summary) 85f:60027  
 Negin, V. A. (with Samko, S. G.) Convergence in  $L_p(\mathbb{R}^n)$  of hypersingular integrals with a homogeneous characteristic. (Russian) 85g:42020  
 Potapov, V. P. See Kovalishina, I. V., 85e:47019  
 Przeworska-Rolewicz, D. Green's formula for right invertible operators. 85b:47010  
 Raina, R. K. (with Kiryakova, V. S.) On the Weyl fractional operator of two dimensions. 85a:26013  
 Rosenlicht, Maxwell Hardy fields. 85d:12001  
 Samko, S. G. See Negin, V. A., 85g:42020  
 Tolmieri, R. The construction of orthonormal bases diagonalizing the discrete Fourier transform. 85e:11057  
 Weinberger, H. F. A characterization of the Pólya frequency functions of order 3. 85b:26011

## 45-XX INTEGRAL EQUATIONS

## 45-01 Elementary exposition; textbooks

- Fenyő, István (with Stolle, H.-W.)  $\star$  Theorie und Praxis der linearen Integralgleichungen. 2. (German) [Theory and application of linear integral equations. 2] 85d:45001a  
 (with Stolle, H.-W.)  $\star$  Theorie und Praxis der linearen Integralgleichungen. 2. (German) [Theory and application of linear integral equations. 2] 85d:45001b  
 (with Stolle, H.-W.)  $\star$  Theorie und Praxis der linearen Integralgleichungen. 3. (German) [Theory and practice of linear integral equations. 3] 85d:45001c  
 (with Stolle, H.-W.)  $\star$  Theorie und Praxis der linearen Integralgleichungen. 4. (German) [Theory and practice of linear integral equations. 4] 85d:45001d  
 Stolle, H.-W. See Fenyő, István, 85d:45001a; 85d:45001b; 85d:45001c and 85d:45001d

## 45-03 Historical (must also be assigned at least one classification number from Section 01)

secondary classifications (45-03)

- Khvedelidze, B. V. Integral equations. (Russian) (See 85g:01004)  
 Netuka, Ivan (with Veselý, Jiří) Integral equations in potential theory. (Czech) 85b:31001  
 Veselý, Jiří See Netuka, Ivan, 85b:31001

## 45-04 Explicit machine computation and programs (not the theory of computation or programming)

## 45-06 Proceedings, conferences, etc.

- (Shcherbakov, B. A.) See Operations research and programming, 85f:45001  
 Operations research and programming  $\star$  Исследование операций и программирование. (Russian) [Operations research and programming] 85f:45001

secondary classifications (45-06)

- (Bahae, A. A.) See Singular integral operators, 85g:00020  
 Singular integral operators  $\star$  Сингулярные интегральные операторы. (Russian) [Singular integral operators] 85g:00020

## 45A05 Linear integral equations

- Kolesov, E. T. (with Yakovlev, Yu. S.) Solution of integral equations of the first kind with a kernel in the form of a generalized hypergeometric function. (Russian) 85c:45001  
 Margulis, L. F. (with Stetsenko, V. Ya.) The Hicks principle for integral equations with an infinite domain of integration and infinite systems. (Russian. Tajiki summary) 85a:45001  
 Mascarenhas, Maria Luisa A linear homogenization problem with time dependent coefficient. 85c:45002  
 Mirolubov, A. A. (with Shishina, V. T.) Applications of an inversion formula for an integral operator. (Russian) 85g:45001  
 Myshkis, A. D. A new proof of the existence of a generalized solution of an integral equation of the first kind of a general type. (Russian) 85a:45002  
 Sedletskii, A. M. A class of integral equations. (Russian) 85b:45001  
 Shishina, V. T. See Mirolubov, A. A., 85g:45001  
 Stetsenko, V. Ya. See Margulis, L. F., 85a:45001  
 Subrahmanyam, M. B. On integral inequalities associated with a linear operator equation. 85j:45001  
 Yakovlev, Yu. S. See Kolesov, E. T., 85c:45001

secondary classifications (45A05)

- Fenyő, István (with Stolle, H.-W.)  $\star$  Theorie und Praxis der linearen Integralgleichungen. 2. (German) [Theory and application of linear integral equations. 2] 85d:45001a  
 (with Stolle, H.-W.)  $\star$  Theorie und Praxis der linearen Integralgleichungen. 2. (German) [Theory and application of linear integral equations. 2] 85d:45001b  
 (with Stolle, H.-W.)  $\star$  Theorie und Praxis der linearen Integralgleichungen. 3. (German) [Theory and practice of linear integral equations. 3] 85d:45001c  
 (with Stolle, H.-W.)  $\star$  Theorie und Praxis der linearen Integralgleichungen. 4. (German) [Theory and practice of linear integral equations. 4] 85d:45001d  
 Gilain, C. (with Lévy, Dom) A new integral equation for summing Feynman graph series (general scalar Lagrangian case). 85h:81031  
 Hönig, Chaim Samuel On the regularity of the solutions of linear Stieltjes-integral equations. 85e:45014  
 Lévy, Dom See Gilain, C., 85h:81031



- Pritchett, B. P. Characterization of certain linear integral operators for logging: operators of direct correspondence. (Russian) **85a:86007**
- Roccaforte, Raymond Asymptotic expansions of traces for certain convolution operators. **85m:47022**
- Schäfer, Friedrich W. Über einige Integrale mit Produkten von Mathieu-Funktionen. [On some integrals with products of Mathieu functions] **85d:33025**
- Stolle, H.-W. See Fenýš, István, **85d:45001a**; **85d:45001b**; **85d:45001c** and **85d:45001d**

#### 45B05 Fredholm integral equations

- Ahner, John F. (with Lowndes, J. S.) On the solution of a class of integral equations. **85k:45001**
- Belonov, S. M. (with Chernous, K. A.) A remark on the regularization by the Schmidt method of Fredholm degenerate equations of the second kind. (Russian) **85e:45001**
- Belward, J. A. Further solutions of a Fredholm integral equation of the first kind arising in elastic half-space and forced-convection problems. **85a:45003**
- Chernous, K. A. See Belonov, S. M., **85e:45001**
- Kekić, Jovan D. Reproductivity of some equations of analysis. II. **85d:45002**
- von Keviczky, Attila Béla Die Fredholm-Carlemanische Auflösungsmethode für radial-wirkende lineare Integraloperatoren mit als Cauchy-Integral darstellbaren Kernen im Raum  $H^p(\Pi_+)$ . [The Fredholm-Carleman solution method for radially acting linear integral operators in the spaces  $H^p(\Pi_+)$ , with kernels that can be represented as a Cauchy integral] **85g:45002**
- Lowndes, J. S. See Ahner, John F., **85k:45001**
- Ramachandran, B. On the equation  $f(x) = \int_{[0, \infty)} f(x+y)d\mu(y)$ . **85c:45003**
- Shelepov, V. Yu. Investigation by the method of Ya. B. Lopatinikil of matrix integral equations in a space of continuous functions. (Russian) **85m:45001**
- Zhang, Shi Sheng On the existence theorems for solutions of a class of random integro-differential equations. (Chinese. English summary) **85g:45003**

secondary classifications (45B05)

- Bashelekhvili, M. O. A new variant of the solution of the third and fourth plane boundary value problems of the statics of an anisotropic elastic body. (Russian. English and Georgian summaries) **85f:73020**
- Costabel, Martin Singuläre Integralgleichungen mit Carlemanscher Verschiebung auf Kurven mit Ecken. [Singular integral equations with Carleman shift on curves with corners] **85b:45006**
- Dhaliwal, R. S. See Singh, B. M.; et al., **85a:73079**
- Dosumov, T. B. On the theory of stability of solutions of a Fredholm equation of the first kind. (Russian) **85j:45031**
- Glushtov, A. I. See Ivanov, Evgenii, **85f:78017**
- Haddow, J. B. See Singh, B. M.; et al., **85a:73079**
- Imanaliyev, M. I. (with Pankov, P. S.) On the question of determination of one-sided delta functions in a complex domain. (Russian) **85j:46007**
- Isakimidis, N. I. Upper bounds for the absolute values of the stress-intensity factors at the tips of slightly curvilinear cracks. **85m:73041**
- Ivanov, Evgenii (with Glushtov, A. I.) Solution of a mixed problem of diffraction of a vertical dipole by a circular opening in a flat screen in the presence of a circular disc coaxial to it. (Russian) **85f:78017**
- Ivanov, Viktor Vladimirovich (with Shapovalova, L. F.) Optimal algorithms for the numerical solution of integral equations. (Russian) **85d:65072**
- Januslauskas, Algimantas Reduction of a problem on an oblique derivative to Fredholm equations. (Russian. English and Lithuanian summaries) **85k:35066**
- Lee, Doo Sung Some mixed boundary value problems concerning a cylinder and an infinite strip. (Korean summary) **85b:73006**
- Moodie, T. B. See Singh, B. M.; et al., **85a:73079**
- Pankov, P. S. See Imanaliyev, M. I., **85j:46007**
- Ramm, A. G. Scattering by a penetrable body. **85g:78016**
- Richter, Gerhard Asymptotische Verteilung der Lösung Fredholmscher Integralgleichungen zweiter Art mit zufälligen, ausgearteten Kernen. [Asymptotic distribution of the solution of Fredholm integral equations of the second kind with stochastic, degenerate kernels] **85j:60114**
- Shapovalova, L. F. See Ivanov, Viktor Vladimirovich, **85d:65072**
- Shestopalov, V. P. ★ Сумматорные уравнения в современной теории дифракции. (Russian) [Summatory equations in modern diffraction theory] **85i:78023**
- Singh, B. M. (with Haddow, J. B.; Moodie, T. B.; Vrbik, J.; Dhaliwal, R. S.) Sudden appearance of external crack by anti-plane shear or by normal tractions. (German and Russian summaries) **85a:73079**
- Volkov, A. P. Efficient method of solving the problem of stamp pressure on an elastic half-space. **85a:73088**
- Vrbik, J. See Singh, B. M.; et al., **85a:73079**

#### 45C05 Eigenvalue problems [See also 34B25, 35Pxx, 45P05.]

- Bai, Jin Dong Eigenvalues and eigenelements of nonlinear integral operators of Hammerstein type. (Chinese) (Not in MR)
- Dzhangir'yan, S. G. (with Lakaev, S. N.) Perturbation theory for eigenvalues and resonances of the Friedrichs operator. (Russian) **85g:45004**
- Gadzhiev, G. A. See Salzmanov, K. A., **85f:45002**
- Lakaev, S. N. See Dzhangir'yan, S. G., **85g:45004**
- Little, G. (with Reade, J. B.) Eigenvalues of analytic kernels. **85b:45001**
- Logan, B. F. On the eigenvalues of a certain integral equation. **85i:45001**
- Reade, J. B. See Little, G., **85b:45001**
- Salzmanov, K. A. (with Gadzhiev, G. A.) A theorem on the density of a system of eigenfunctions of a two-parameter system of integro-differential equations. (Russian) **85f:45002**

secondary classifications (45C05)

- Anastassioulou, E. G. New formulae for the discrete eigenvalues of the homogeneous one-speed transport equation. **85g:82131**

- Bertero, M. (with de Mol, C.; Gori, Franco; Ronchi, L.) Number of degrees of freedom in inverse diffraction. (French and German summaries) **85b:78020**
- Brüning, Jochen On the eigenvalue problem of 't Hooft. **85i:81023**
- Carl, Bernd (with Kühn, Thomas) Entropy and eigenvalues of certain integral operators. **85e:47041**
- Gori, Franco See Bertero, M.; et al., **85b:78020**
- Kühn, Thomas See Carl, Bernd, **85e:47041**
- de Mol, C. See Bertero, M.; et al., **85b:78020**
- Ronchi, L. See Bertero, M.; et al., **85b:78020**
- Sobirov, I. Oscillation properties of the second eigenvector. (Russian. Tajiki summary) **85c:45023**

#### 45D05 Volterra integral equations [See also 34A10.]

- Aasnov, A. A class of systems of Volterra integral equations of the first kind. (Russian) **85b:45002**
- Balsakov, A. B. Asymptotic behavior of solutions of a nonlinear Volterra integral equation. (Russian. English summary) **85d:45003**
- Barbanti, L. Linear Volterra-Stieltjes integral equations and control. **85b:45003**
- Bhise, V. M. See Sarojini, K., **85f:45007**
- Brunner, Hermann On the discretization of Volterra integral equations. **85j:45002**
- Bukhgeim, A. L. Carleman estimates for Volterra operators and the uniqueness of inverse problems. (Russian) **85i:45002**
- Carleman estimates for Volterra operators and the uniqueness of inverse problems. (Russian) **85k:45002**
- Burton, Theodore Allen ★ Volterra integral and differential equations. **85g:45005**
- Corduneanu, Adrian The resolvent method in the case of linear integral inequalities. (Romanian. English summary) **85j:45003**
- Freedman, M. A. Necessary and sufficient conditions for discontinuous evolutions with applications to Stieltjes integral equations. **85c:45004**
- van Gils, S. A. ★ Linear Volterra convolution equations: semigroups, small solutions and convergence of projection operators. **85a:45004**
- Gripenberg, Gustaf Two Tauberian theorems for nonconvolution Volterra integral operators. **85a:45005**
- Hirano, Norimichi Asymptotic behavior of solutions of nonlinear Volterra equations. **85c:45005**
- Hoppenstedt, F. C. An algorithm for approximate solutions to weakly filtered synchronous control systems and nonlinear renewal processes. **85f:45003**
- Ivanov, Viktor Vladimirovich See Vuginshtein, A. E., **85g:45008**
- Kabanikhin, S. I. The solvability of inverse problems for differential equations. (Russian) **85k:45003**
- Khromov, A. P. See Matanev, L. B., **85d:45004**
- Kopach, M. I. Two-sided Volterra integral inequalities with nonmonotone operators. (Russian) **85j:45004**
- Kwapisz, M. (with Turo, J.) Existence and uniqueness of solution for some integral-functional equation. **85g:45006**
- Liu, Qing Rong The maximal and minimal solutions of a class of nonlinear integral equations in transport theory. **85c:45006**
- Londen, S.-O. On some integral equations with locally finite measures and  $L^\infty$ -perturbations. **85j:45005**
- Lyapun, L. N. Volterra equations in a Banach space. (Russian) **85k:45004**
- Magnitkii, N. A. Asymptotic behavior of the solutions of the Volterra integral equation of the first kind. (Russian) **85e:45002**
- Matanev, L. B. (with Khromov, A. P.) Generating functions of Volterra integral operators. (Russian) **85d:45004**
- Morro, A. A pointwise estimate for the solution to a linear Volterra integral equation. (Italian summary) **85b:45002**
- Mureşan, Viorica Bezüglich eines Integraloperators vom Typ Volterra-Sobolev. (Romanian summary) [On an integral operator of Volterra-Sobolev type] **85d:45005**
- Nowicka, Krystyna On the existence of solutions for some integral-functional equation. **85k:45005**
- Pachpatte, B. G. On some applications of Waiewski method for multiple Volterra integral equations. **85f:45004**
- On a nonlinear Volterra integral-functional equation. **85f:45005**
- Parhi, N. On a class of Volterra integral equations with Stieltjes measure. **85f:45006**
- Pulyaev, V. F. (with Tsalyuk, Z. B.) On the question of admissibility of certain pairs of spaces for linear operators and Volterra equations. (Russian) **85d:45006**
- Reynolds, David W. On linear singular Volterra integral equations of the second kind. **85i:45003**
- Rooney, P. G. On an integral equation on Sub-Sisonenko. **85g:45007**
- Rzepecki, B. On some classes of Volterra differential-integral equations. **85b:45003**
- Sandberg, Irwin W. Volterra-like expansions for solutions of nonlinear integral equations and nonlinear differential equations. **85b:45004**
- Sarojini, K. (with Bhise, V. M.) On bounds for the solution of Volterra integral equations. **85f:45007**
- Srazhdinlov, A. An existence and uniqueness theorem for the solution of a linear Volterra-Stieltjes integral equation of the first kind in the class of continuous functions of bounded variation. (Russian) **85e:45003**
- Tanabe, Hiroki Linear Volterra integral equations of parabolic type. **85f:45008**
- Ten Men Yan Regularization of two-dimensional Volterra integral equations of the first kind. (Russian) **85e:45004**
- Tsalyuk, Z. B. See Pulyaev, V. F., **85d:45006**
- Turini, M. Abstract Gronwall-Bellman inequalities on ordered metrizable uniform spaces. **85c:45007**
- Turo, J. See Kwapisz, M., **85g:45006**
- Vuginshtein, A. E. (with Ivanov, Viktor Vladimirovich) Analytic investigation of continual models of developing systems. (Russian) **85g:45008**
- Yamada, Yoshio Asymptotic stability for some systems of semilinear Volterra diffusion equations. **85h:45005**

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- Andrade, C. (with McKee, Sean) Optimal stability functionals and their application to discretisation methods for Volterra integro-differential equations. **85g:65130**
- Ananov, A. A class of Volterra operator equations. (Russian) **85h:47048**
- Atdaev, S. On the theory of solutions of nonlinear equations with a Volterra operator on the half axis. (Russian) **85h:45027**
- Asis-Karleva, N. S. (with Gegel', E. I.) The modified method of successive approximations. (Russian) **85j:45029**
- Baker, Christopher T. H. Stability and structure in numerical methods for Volterra equations. **85g:65131**
- Bao Ping, Liu (with Pao, C. V.) Integral representation of a generalized diffusion model in population problems. **85e:35119**
- Brilla, Igor Bifurcation theory of the time-dependent von Kármán equations. **85c:73025**
- Brunner, Hermann Nonpolynomial spline collocation for Volterra equations with weakly singular kernels. **85d:65009**
- Chashchin, O. N. Regularization of Volterra operator equations of the second kind in a scale of Banach spaces. (Russian) **85h:47011**
- Chen, Ren Zhao Series solutions of a class of integro-differential equations, and their application to population problems. (Chinese. English summary) **85h:92032**
- Denisenko, N. V. (with Yanovich, L. A.) One-step numerical methods for solving systems of second-order linear integro-differential equations of Volterra type. (Russian) **85d:65070**
- Diekmann, O. (with van Gils, S. A.) Invariant manifolds for Volterra integral equations of convolution type. **85h:45026**
- Fliess, Michel (with Lamnabhi-Lagarigue, Françoise) Séries de Volterra et formalisme hamiltonien. (English summary) [Volterra series and Hamiltonian formalism] **85m:93013**
- Gegel', E. I. See Asis-Karleva, N. S., **85j:45029**
- van Gils, S. A. See Diekmann, O., **85h:45026**
- Gopalsamy, K. Global asymptotic stability in Volterra's population systems. **85j:92028**
- Grimmer, R. C. (with Kappel, F.) Series expansions for resolvents of Volterra integro-differential equations in Banach space. **85k:45025**
- Gripenberg, Gustaf The construction of the solution of an optimal control problem described by a Volterra integral equation. **85g:49012**
- Hacı, L. Approximate solution of vector equations. **85d:65071**
- Heard, Melvin L. A class of hyperbolic Volterra integro-differential equations. **85e:45013**
- Huang, Qi Chang Uniform behavior of the solutions of functional-differential equations with unbounded delay. (Chinese. English summary) **85h:34067**
- Kang, Shi Kun See Zhang, Shi Sheng, **85c:60090**
- Kappel, F. (with Kunich, K.) Approximation of the state of infinite delay and Volterra-type equations. **85h:65118**
- See also Grimmer, R. C., **85k:45025**
- Kleptsyna, M. L. (with Veretennikov, A. Ju.) Strong solutions of Itô-Volterra stochastic equations. (Russian. English summary) **85f:60086**
- Kunich, K. See Kappel, F., **85h:65118**
- Lamnabhi-Lagarigue, Françoise See Fliess, Michel, **85m:93013**
- Leonov, G. A. (with Smirnova, V. B.) Some properties of solutions of Volterra integro-differential equations with piecewise-continuous periodic nonlinear functions. (Russian) **85m:45009**
- Londen, S.-O. On an integral equation with  $L^\infty$ -perturbation. **85g:45024**
- (with Nohel, John A.) Nonlinear Volterra integro-differential equation occurring in heat flow. **85j:45027**
- Malamud, M. M. Remarks on the spectrum of one-dimensional perturbations of Volterra operators. (Russian) **85i:47031**
- Markowich, Peter A. (with Renardy, Michael) The numerical solution of a class of quasilinear parabolic Volterra equations arising in polymer rheology. **85h:65275**
- McKee, Sean See Andrade, C., **85g:65130**
- Mosahab, S. The relationship between various  $L^p$  stabilities of time-varying feedback systems. **85a:93107**
- Nohel, John A. See Londen, S.-O., **85j:45027**
- Pachpatte, B. G. Monotone method for some nonlinear Volterra integro-differential equations. **85a:45012**
- Pao, C. V. See Bao Ping, Liu, **85e:35119**
- Power, S. C. A Hardy-Littlewood-Fejér inequality for Volterra integral operators. **85k:47052**
- Prins, Jan On resolvent operators for linear integro-differential equations of Volterra type. **85d:45026**
- Reichert, Marianne Zusammenhang der Fixpunktmenge bei kompakten Volterra-Operatoren. (English summary) [Connectedness of the fixed-point set of a compact Volterra operator] **85h:45030**
- Renardy, Michael See Markowich, Peter A., **85h:65275**
- Sidorov, N. A. Lyapunov's methods in the theory of differential equations with a Volterra operator multiplying the derivative. (Russian) **85j:34130**
- Smirnova, V. B. See Leonov, G. A., **85m:45009**
- Tsuruta, Kunio Bounded linear operators satisfying second-order integro-differential equations in a Banach space. **85d:45027**
- Tursunkulov, B. Completely continuous operators in generalized Hölder spaces. (Russian) **85a:47025**
- Veretennikov, A. Ju. See Kleptsyna, M. L., **85f:60086**
- Virchenko, N. A. A property of a generalized associated Legendre function of the first kind. (Russian) **85g:33006**
- Volkman, Peter A remark on integral inequalities of Volterra type. (Russian) **85j:20029**
- Weintischke, H. J. An integro-differential equation arising in thermo-viscoelasticity. **85f:73095**
- Wolkenfelt, P. H. M. On the relation between the repetition factor and numerical stability of direct quadrature methods for second kind Volterra integral equations. **85e:65053**
- Yang, Yi Song On Bellman-Gronwall's inequality. (Chinese summary) **85f:20021**
- Yanovich, L. A. See Denisenko, N. V., **85d:65070**

Ye, Xiao Ye Controllability of systems described by Volterra integral equations. (Chinese) (Not in MR)

Zhang, Shi Sheng (with Kang, Shi Kun) On the existence problem of random solutions of a class of random equations. (Chinese. English summary) **85c:60090**

## 45Exx Singular integral equations [See also 30E20, 30E25, 44A15, 44A35.]

## secondary classifications (45Exx)

- (Der-Megreditchian, Christianne) See Parton, V. Z., **85e:73001**
- Meister, E. ★ Randwertaufgaben der Funktionentheorie. (German) [Boundary value problems in the theory of functions] **85j:30085**
- Parton, V. Z. (with Perlin, P. I.) ★ Équations intégrales de la théorie de l'élasticité. (French) [Integral equations of elasticity theory] **85e:73001**
- Perlin, P. I. See Parton, V. Z., **85e:73001**
- 45E05 Integral equations with kernels of Cauchy type [See also 35J15.]
- Abdullaev, S. K. A multidimensional singular integral over a bounded  $m$ -dimensional domain. (Russian) **85g:45009**
- Bliev, N. K. Integral operators with a Cauchy kernel and their applications in boundary value problems. (Russian) **85b:45004**
- (with Zadina, Kh. U.) Solvability of a singular integro-differential equation in fractional spaces. (Russian. Kazakh summary) **85d:45007**
- Clancey, K. P. Corrigendum: "One-dimensional singular integral operators on  $L^p$ " [J. Math. Anal. Appl. **54** (1976), no. 2, 522-529; MR **54** #3320]. **85b:45005**
- Costabel, Martin Fredholm theory of one-dimensional singular integral operators with Carleman shift. **85i:45004**
- Denisenko, N. V. See Sheshko, M. A., **85m:45002**
- Dudenko, V. D. Approximate solution of certain systems of singular integral equations with shift. (Russian) **85h:45006**
- Dybin, V. B. A singular integral equation with coefficients admitting factorization. (Russian) **85i:45005**
- Goewami, S. K. See Mandal, Birendranath, **85c:45008**
- Grudskii, S. M. (with Khevelev, A. B.) Invertibility in  $L_2(\mathbb{R})$  of singular integral operators with periodic coefficients and shift. (Russian) **85g:45010**
- Guseinov, Z. G. Approximate solution of a characteristic singular integral equation. (Russian) **85j:45006**
- Khevelev, A. B. See Grudskii, S. M., **85g:45010**
- Khuskivadze, G. A. See Paataashvili, V. A., **85d:45009**
- Mandal, Birendranath (with Goewami, S. K.) A note on a singular integral equation. **85c:45008**
- Meyer, Christian Reduktionsverfahren für singuläre Integralgleichungen mit speziellen Carlemanschen Verschiebungen. [Reduction methods for singular integral equations with special Carleman shifts] **85i:45006**
- Mikityuk, Ya. V. Properties of certain singular integral operators. (Ukrainian. Russian summary) **85d:45008**
- Nyaga, V. I. (with Yanioglu, M. N.) A counterexample in the theory of singular integral equations with conjugation. (Russian) **85j:45007**
- A singular integral operator with conjugation along a contour with corner points. (Russian) **85i:45006**
- Paataashvili, V. A. (with Khuskivadze, G. A.) A singular Cauchy operator on a countable set of concentric circles. (Russian) **85d:45009**
- Raslanbekov, S. N. A singular integral equation of the first kind in the exceptional case in classes of generalized functions. (Russian) **85j:45008**
- Sheshko, M. A. (with Denisenko, N. V.) Solution of a class of two-dimensional singular integral equations of the first kind. (Russian) **85m:45002**
- (with Yakimenko, T. S.) Exact and approximate solution of a class of singular integral equations. (Russian. English summary) **85i:45009**
- Shilin, A. P. Solvability of a singular integral equation with two shifts. (Russian) **85i:45006**
- Silbermann, Bernd Lokale Theorie des Reduktionsverfahrens für singuläre Integralgleichungen. (English and Russian summaries) [Local theory of the reduction method for singular integral equations] **85a:45006**
- Simonenko, I. B. Global and local factorability of a measurable matrix-function, and the Noether property of the singular operator generated by it. (Russian) **85c:45010**
- Wang, Jian Zhong Direct method of solution of singular integral equations with complex Hilbert kernel. (Chinese. English summary) **85i:45007**
- Yakimenko, T. S. See Sheshko, M. A., **85c:45009**
- Yang, Ming Zhu (with Zhu, Guang Tian) Neumann series solution for a stationary linear integral Boltzmann equation. (Chinese) (Not in MR)
- Yanioglu, M. N. See Nyaga, V. I., **85j:45007**
- Zadina, Kh. U. See Bliev, N. K., **85b:45004**
- Zhu, Guang Tian See Yang, Ming Zhu, (Not in MR)

## secondary classifications (45E05)

- Abzalimov, T. A class of functions that is invariant with respect to a double singular Cauchy integral. (Russian) **85d:42022**
- Anastassioulou, E. G. (with Ioakimidis, N. I.) A generalization of the Siewert-Burniston method for the determination of zeros of analytic functions. **85i:30007**
- Brown, S. N. (with Stewartson, K.) On an integral equation of marginal separation. **85c:76036**
- (Deng, Yue Hua) See Zhang, Shi Xun, **85j:30083**
- Elliott, David A Galerkin-Petrov method for singular integral equations. **85h:65272**
- Rates of convergence for the method of classical collocation for solving singular integral equations. **85i:65171**
- Elschner, J. Galerkin methods with splines for singular integral equations over  $(0, 1)$ . **85g:65133**

- Garif'yanov, F. N. A special case of the Riemann problem on the line. I. (Russian) 85c:30008
- Gegelia, T. G. Numerical solutions of the basic problems of elasticity theory by the method of singular integral equations. (Russian) 85m:73001
- Gerasoulis, Apostolos Singular integral equations—the convergence of the Gauss-Jacobi quadrature method. 85k:85105
- Golberg, Michael A. The convergence of a collocation method for a class of Cauchy singular integral equations. 85i:85172
- Ioakimidis, N. I. On the validity of the singular integral equations of elasticity problems at points of loading discontinuities. 85a:73076  
See also Anastassiou, E. G., 85i:30007
- Ishchenko, E. V. A scalar discontinuous boundary value problem of linear conjugation in the case of a general piecewise-smooth boundary curve. (Russian. English and Georgian summaries) 85f:30069  
A vector discontinuous problem of linear conjugation. (Russian. English and Georgian summaries) 85f:30070
- Kekeliya, A. G. Reduction of integro-differential equations of an aircraft's rigid and elastic wings of finite span to ordinary singular equations. (Georgian. English and Russian summaries) 85f:30064
- Khachatryan, G. Kh. A one-dimensional singular operator in weighted  $L_p$  spaces. (Russian) 85m:42016
- Khushivadze, G. A. See Paataashvili, V. A., 85f:45021
- Kosenko, O. I. A singular integral equation with Carleman shift in the case of common zeros of matrix-symbols. (Russian) 85h:45008
- Lifanov, I. K. Numerical solution of one-dimensional singular integral equations. (Russian) 85g:85135
- Lin, Yu Bo A periodic Riemann boundary value problem of nonnormal type and its application to singular integral equations with Hilbert kernel. I. (Chinese. English summary) 85i:30080
- Mikhailov, S. E. An integral equation of certain boundary value problems for harmonic functions in plane multiply connected domains with an irregular boundary. (Russian) 85c:31003
- Paataashvili, V. A. (with Khushivadze, G. A.) Boundedness of a singular Cauchy operator in Lebesgue spaces in the case of nonsmooth contours. (Russian) 85f:45021
- Pak, Chang Pin Continuity of singular integral operators with kernels dependent on parameters. I. (Korean. English summary) (Not in MR)
- Prüssdorf, S. (with Rathsfeld, Andreas) A spline collocation method for singular integral equations with piecewise continuous coefficients. 85h:85276
- Rathsfeld, Andreas See Prüssdorf, S., 85h:85276
- Reynolds, David W. On linear singular Volterra integral equations of the second kind. 85i:45003
- Schmidt, Günter On spline collocation for singular integral equations. 85f:85128
- Spence, D. A. Some new results for the integro-differential equation of jet-flap theory. 85f:76027
- Stewartson, K. See Brown, S. N., 85c:76036
- (Sun, Shun Hua) See Zhang, Shi Xun, 85j:30083
- Vasil'ev, I. L. Systems of singular integral equations with analytic kernels and reflection. (Russian. English summary) 85i:45009
- Verma, R. U. Formulae of Fredholm type for singular integral operators with nonvanishing indices. 85i:47014
- Zargaryan, S. S. Singularities of solutions of a system of singular integral equations of the plane theory of elasticity under stresses given on the boundary. (Russian. Armenian summary) 85f:73019
- Zhang, Shi Xun Correction and a newer proof: "A new proof of the Sokhotskiĭ-Plemelj formula" [Sichuan Daxue Xuebao 4 (1964), 39–42] by S. H. Sun and Y. H. Deng. (Chinese. English summary) 85j:30083
- 45E10 Integral equations of the convolution type (Abel, Picard, Toeplitz and Wiener-Hopf type) [See also 47B35.]
- Babayan, A. O. A special case of the homogeneous Wiener-Hopf equation. (Russian. Armenian summary) 85f:45009
- Bart, H. (with Kroon, L. G.) An indicator for Wiener-Hopf integral equations with invertible analytic symbol. 85j:45009a  
(with Kroon, L. G.) Addenda: "An indicator for Wiener-Hopf integral equations with invertible analytic symbol". 85j:45009b
- Betligriv, M. A. Asymptotic behavior of the solution of the Wiener-Hopf equation in the case of fractional zeros of the symbol. (Russian) 85m:45003
- Böttcher, Albrecht Some two-dimensional Wiener-Hopf integral equations with a vanishing symbol. (Russian) 85c:45005  
Das Reduktionsverfahren für nichtelliptische Wiener-Hopfische Integraloperatoren in einer Klasse von topologischen Vektorräumen. [The reduction method for nonelliptic Wiener-Hopf integral operators in a class of topological vector spaces] 85j:45010  
The reduction method for Wiener-Hopf integral operators with piecewise-continuous symbol in  $L^p$  spaces. (Russian) 85f:45011
- Cherakili, Yu. I. See Peschanskiĭ, A. I., 85k:45007
- Dolzhikov, V. V. Existence of a solution of a Wiener-Hopf equation for a class of dynamical systems in  $L_2$ . (Russian) 85d:45010
- Dybin, V. B. See Dzhirgalova, S. B., 85h:45007
- Dzhirgalova, S. B. (with Dybin, V. B.) Equations of convolution type "with two kernels" in the spaces  $L_2(-\infty, t_2(-\infty))$ . (Russian) 85h:45007
- Gadzhiev, N. M. Description of sets of convergence of certain families of singular integrals depending on two parameters. (Russian. English and Azerbaijani summaries) 85j:45011
- Heins, A. E. The Sommerfeld half-plane problem revisited. II. The factoring of a matrix of analytic functions. 85f:45010  
The Sommerfeld half-plane problem revisited. III. Parallel plate media with mixed boundary conditions. 85f:45011
- Hoppenstedt, F. C. An averaging method for Volterra integral equations with applications to phase-locked feedback systems. 85d:45011
- Jones, D. S. Factorization of a Wiener-Hopf matrix. 85j:45012
- Karapetyants, N. K. Local properties of the solution of the Wiener-Hopf equation. (Russian) 85j:45013
- Kosenkov, O. I. A singular integral equation with Carleman shift in the case of common zeros of matrix-symbols. (Russian) 85h:45008
- Krein, M. G. (with Shmul'yan, Yu. L.) Wiener-Hopf equations whose kernels admit an integral representation in terms of exponentials. (Russian) 85g:45012a  
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- Logan, B. F. Errata: "An integral equation connected with the Jacobi polynomials" [SIAM J. Math. Anal. 14 (1983), no. 2, 269–322; MR 84f:45006]. 85a:45007
- Nikolenko, P. V. Stability of a system of partial indices of a family of matrix-functions on a sphere. (Russian. English and Georgian summaries) 85b:45007
- Ohranov, R. (with Otelbaev, M.) Solvability of a class of nonlinear singular integral equations. (Russian. Kazakh summary) 85m:45004
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- Prasnowska-Rolawicz, D. Generalized Fox integral equations solved by functional equations. 85j:45014
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- Abdusatarov, B. B. See Verlan', A. F.; et al., 85d:45024
- Bilenko, V. I. See Verlan', A. F.; et al., 85d:45024
- Böttcher, Albrecht (with Pasenchuk, A. È.) Invertibility of Wiener-Hopf operators in the quarter-plane with kernels whose support is situated in a half-plane. (Russian) 85e:47036  
(with Silbermann, Bernd) Wiener-Hopf determinants with symbols having series of analytic type. 85e:47035
- Davies, A. R. On a constrained Fourier extrapolation method for numerical deconvolution. 85f:85121
- Davis, J. H. (with Dickinson, R. G.) Spectral factorization by optimal gain iteration. 85f:93082
- Dickinson, R. G. See Davis, J. H., 85f:93082
- Dybin, V. B. (with Pletenev, F. A.) A discrete-continuous convolution operator in the quarter plane with a semipolynomial symbol. (Russian) 85e:47036
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- Meister, E. Multiple-part Wiener-Hopf operators. 85f:78018  
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- Mkhitaranyan, S. M. On certain spectral relationships associated with the Carleman integral equation and their applications to contact problems. 85k:73092
- Mkhitaranyan, V. G. An orthogonal integral relation and its application to contact problems of elasticity theory. (Russian. Armenian summary) 85d:73033
- Moss, William F. Numerical solution of integral equations with convolution kernels. II. 85m:65137
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- Pletenev, F. A. See Dybin, V. B., 85e:47038
- Saitô, Yoshimi An asymptotic behavior of the S-matrix and the inverse scattering problem. 85k:35184
- Salamon, D. ★ Control and observation of neutral systems. 85e:93002
- Sankar, T. S. See Fabrikant, V. I.; et al., 85d:31008
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- Swamy, M. N. S. See Fabrikant, V. I.; et al., 85d:31008
- Verlan', A. F. (with Abdusatarov, B. B.; Bilenko, V. I.) Estimate of the error of a numerical algorithm for solution of integral equations of the problem of signal reconstruction. (Russian) 85d:45024
- Williams, W. E. Recognition of some readily "Wiener-Hopf" factorizable matrices. 85i:15021
- Zelentsov, V. B. On the solution of a class of integral equations. 85c:73073
- 45E99 None of the above, but in this section
- Abdullaev, S. K. (with Vasil'ev, V. B.) On the approximate solution of multidimensional singular integral equations. (Russian) 85k:45008
- Antonishin, I. O. Asymptotic behavior of bounded solutions for a system of integral inequalities with kernels depending on the difference of arguments. (Russian) 85c:45011
- Betligriv, M. A. Asymptotic expansion of solutions of an integral equation with a homogeneous degree 1 kernel. (Russian) 85j:45015
- Bil'man, B. M. Some singular two-dimensional integral equations. (Russian. Tajiki summary) 85m:45005



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Toklikishvili, S. K. An effective solution of the characteristic singular integral equation for functions of several complex variables in the case of one class of coefficients. (Russian. English and Georgian summaries) 85j:45016

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Quispel, G. R. W. (with Nijhoff, F. W.; Capel, H. W.; van der Linden, J.) Bäcklund transformations and singular integral equations. 85g:58048

Smarszewski, R. (with Malinowski, H.) Numerical solution of generalized Abel integral equations by spline functions. (Polish summary) 85b:65278

Trummer, Manfred R. A note on the evaluation of bounded  $L_2$ -functionals at  $B$ -splines and its application to singular integral equations. (German summary) 85a:65042

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Aggarwala, B. D. See Nasim, Cyril, 85d:45012

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Dwivedi, A. P. (with Sharma, J. P.; Kushwaha, P. S.) Solution of simultaneous dual integral equations. 85e:45006

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(with Gupta, P. M.) A certain class of quadruple equations involving series of Jacobi and Laguerre polynomials. 85m:45006

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Kostakli, V. A. An infinite algebraic system with block-Treplitz matrices and exponential multipliers. (Russian) 85k:45011

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Nasim, Cyril (with Aggarwala, B. D.) On some dual integral equations. 85d:45012

Nguyễn Văn Ngự. Certain problems of the theory of paired series equations. (Russian) 85a:45008

Saxena, Vinod Prakash. Formal solution of certain new pair of dual integral equations involving  $H$ -functions. 85g:45013

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Pachpatte, B. G. On some applications of Wazwaz method for multiple Volterra integral equations. 85f:45004

Roe, L. R. F. (with de Hoog, Frank) Exact solutions of certain dual integral equations and their asymptotic properties. 85a:73078

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##### 45F15 Systems of singular linear integral equations

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Pak, Chang Pin. Continuity of singular integral operators with kernels dependent on parameters. II. (Korean. English summary) 85k:45014

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Khusnutdinov, R. Sh. Nonlinear singular integro-differential equations and their application to certain Hilbert boundary value problems. (Russian) 85g:45014

Slater, Morton L. (with Wang, Amy Huang) On the equation  $\varphi(x) = \int_L f[\varphi(\xi)] d\mu(\xi)$ . 85g:45015

Sun, Jing Xian. A note on eigenvalues of Hammerstein nonlinear integral equations. (Chinese. English summary) 85m:45007

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Höllig, Klaus (with Nohel, John A.) A nonlinear integral equation occurring in a singular free boundary problem. (See 85b:00006)

Khrennikov, A. Yu. An existence theorem for the solution of the infinite-dimensional Schrödinger equation with quadratic potential. (Russian) 85j:35188

Kuruoglu, Zeki C. (with Micha, David A.) Collision dynamics of three interacting atoms: the Faddeev equations in a diabatic electronic basis. 85d:81167

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##### 45G10 Other nonlinear integral equations

Bachurskaya, A. F. (with Tsalyuk, Z. B.) Some sufficient conditions for the existence of a solution of a functional-integral equation. (Russian) 85m:45008

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Joehi, S. R. A system of abstract measure integral equations. 85f:45014

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Magomedov, G. M. (with Dzhalalova, S. N.) Some classes of nonlinear singular integro-differential equations. (Russian) 85d:45016

Mironov, A. V. Continuous dependence on control of solutions of a nonlinear integral equation. (Russian) 85k:45016

Morozov, S. F. See Kalinin, A. V., 85k:45015

Okrasinski, Wojciech. Nonnegative solutions of some nonlinear integral equations. 85j:45019

Pachpatte, B. G. On a system of nonlinear integral equations. 85b:45010

Method of upper and lower solutions for nonlinear integral equations of Urysohn type. 85b:45011

- Panchal, Champak D. Existence theorems for equations of Hammerstein type. 85h:45012
- Phan Văn Chu'ng. Sur l'existence des solutions d'une équation intégrale multivoque à paramètre aléatoire. (English summary) [Existence of solutions for a multivalued integral equation with random parameter] 85a:45010
- Polityukov, V. P. A method of solution of nonlinear Volterra integral equations. (Russian) 85d:45017
- Shahabuddin, M. On approximations to solutions of nonlinear integral equations. (Bengali summary) 85h:45013
- Sprekels, J. See Glaschoff, Klaus. 85d:45013
- Sun, Jing Xian. Positive solutions of Hammerstein nonlinear integral equations. 85h:45014
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- Haymet, A. D. J. See Klein, William. 85h:82020
- Höllig, Klaus (with Nohel, John A.). A nonlinear integral equation occurring in a singular free boundary problem. 85d:35108
- Joehi, Mohan. Solvability of generalized Hammerstein equations. 85h:47072
- An approximate solvability scheme for a class of nonlinear equations. 85i:47069
- Klein, William (with Haymet, A. D. J.). Linear integral equations and renormalization group. 85h:82020
- Liu, Qing Rong. The maximal and minimal solutions of a class of nonlinear integral equations in transport theory. 85c:45006
- Mirzaev, G. G. Multiparameter spectral problem with Hammerstein operators. (Russian) (See 85k:00010)
- Nasyrov, I. S. Construction of small solutions of a nonlinear integral equation by the method of branching iterations. (Russian) 85i:45018
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- Parhi, N. On a class of Volterra integral equations with Stieltjes measure. 85f:45006
- Sun, Jing Xian. A note on eigenvalues of Hammerstein nonlinear integral equations. (Chinese. English summary) 85m:45007
- Zeraghiya, P. K. A class of nonlinear integro-differential equations of hyperbolic type. (Russian. English and Georgian summaries) 85e:45010

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- Kalla, S. L. See Saxena, Ram Kishore. 85c:45012
- Ling, Rina. Reducing increasing monotonicity of kernels. 85g:45018
- Saxena, Ram Kishore (with Kalla, S. L.). An integral equation associated with  $p+2F_{p+1}$ . (Spanish summary) 85c:45012
- Verma, R. U. Integral equations involving the G-function as kernel. 85i:45011

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- Dwivedi, A. P. (with Gupta, P. M.). The solution of six integral equations with generalized Legendre functions as kernels. 85j:45017
- Guha, Bandana. An integral equation involving  ${}_3F_2+1$  in the kernel. (Hindi. English summary) 85k:33004
- Gupta, P. M. See Dwivedi, A. P. 85j:45017
- Saigeti, F. On Niemiński operators in Sobolev spaces. 85a:47056
- Virchenko, N. A. A property of a generalized associated Legendre function of the first kind. (Russian) 85g:33006

#### 45J05 Integro-ordinary differential equations

- Angelov, V. G. (with Bainov, D. D.). Existence and uniqueness of the global solution of an integro-differential equation of elasticity theory. (Bulgarian. English and Russian summaries) 85j:45020
- Bainov, D. D. (with Milusheva, Svetla D.). Application of the averaging method to a two-point boundary value problem for systems of integro-differential equations of Fredholm type, unsolved with respect to a derivative. (Russian. Romanian summary) 85c:45013
- (with Milusheva, Svetla D.). Application of the averaging method for solution of multipoint boundary value problems with a nonlinear boundary condition for a class of integro-differential equations containing multiple integrals. (Russian) 85b:45014
- See also Khristova, S. G. 85a:45011 and Angelov, V. G. 85j:45020
- Dudka, N. A. An approximate method for solving integro-differential equations. (Russian) 85k:45017
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- Fominikh, Yu. V. See Voronina, N. V.; et al. 85j:45023
- Gopalsamy, K. Stability, instability, oscillation and nonoscillation in scalar integro-differential systems. 85k:45018
- Grimmer, R. C. (with Schappacher, W.). Weak solutions of integro-differential equations and applications. 85e:45008
- Khristova, S. G. (with Zlatev, S. G.). Justification of the averaging method for solution of a boundary value problem for infinite systems of integro-differential equations of Fredholm type. (Bulgarian. English and Russian summaries) 85i:45012
- Periodic solutions of second-order integro-differential equations with maxima. (Bulgarian. English and Russian summaries) 85g:45019
- (with Bainov, D. D.). Asymptotic expansion of the solution of an initial value problem of a singularly perturbed system of integro-differential equations with delay. 85a:45011

- Khusanov, D. Kh. Periodic solutions of second-order quasilinear integro-differential equations in the resonance case. (Russian) 85d:45018

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- Kimmel, M. Integro-differential equations in cellular populations dynamics. 85f:45016
- Kurbanov, P. Classification and stability of resonance regimes of certain nonlinear viscoelastic systems. 85c:45014
- Leonov, G. A. (with Smirnova, V. B.). Some properties of solutions of Volterra integro-differential equations with piecewise-continuous periodic nonlinear functions. (Russian) 85m:45009
- Milusheva, Svetla D. See Bainov, D. D. 85b:45014 and 85c:45013
- Normuratov, Kh. (with Filatov, A. N.). The initialization problem in the theory of singularly perturbed integro-differential equations. (Russian) 85g:45020
- (with Filatov, A. N.). The freezing method for systems of integro-differential equations with a small parameter multiplying the derivative. (Russian) 85j:45021
- Pachpatte, B. G. Monotone method for some nonlinear Volterra integro-differential equations. 85a:45012
- Rama Mohana Rao, M. (with Srinivas, P.). Positivity and boundedness of solutions of Volterra integro-differential equations. 85j:45022
- Rekha, R. A. See Voronina, N. V.; et al. 85j:45023
- Ryabov, Yu. A. (with Khusanov, D. Kh.). Two-sided solutions of linear integro-differential equations of Volterra type with infinitely distant aftereffect. (Russian) 85h:45015
- Rsepecki, B. On the existence of solutions of infinite systems of differential and integral-differential equations. 85a:45013
- Samolienko, A. M. (with Vukovich, B.). The Galerkin method of finding periodic solutions for integro-differential equations of Volterra type. (Ukrainian. Russian summary) 85b:45016
- Schappacher, W. See Grimmer, R. C. 85e:45008
- (Sergeev, A. G.) See Khristova, S. G. 85g:45019
- Sinestrari, Eugenio. Time-dependent integro-differential equations in Banach spaces. 85b:45015
- Shin'ko, G. I. Expansion in eigenfunctions of a boundary value problem with a spectral parameter entering into the boundary condition. (Russian) 85h:45017
- Smirnova, V. B. See Leonov, G. A. 85m:45009
- Srinivas, P. See Rama Mohana Rao, M. 85j:45022
- Talpalaru, Pavel. On asymptotic equivalence of integro-differential systems. 85d:45019
- (Vladimirov, V. S.) See Khristova, S. G. 85g:45019
- Voronina, N. V. (with Rekha, R. A.; Fominikh, Yu. V.) ★ Осциллирующие функции и некоторые их приложения. (Russian) [Oscillating functions and some of their applications] 85j:45023
- Vukovich, B. See Samolienko, A. M. 85b:45016
- Yanagiya, Akira. On some integro-differential equations. 85j:45024
- Yang, En Hao. Perturbation theorems for nonlinear systems of integro-differential equations of Volterra type. (Chinese) 85c:45015
- Zhdanov, V. I. Two-sided solutions of the equation of motion of charged particles with lag. (Russian) 85c:45016
- Zlatev, S. G. See Khristova, S. G. 85i:45012

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- Alymbaev, A. T. The Bubnov-Galerkin method for constructing periodic solutions of autonomous systems of integro-differential equations. (Russian) 85g:85129
- Andrade, C. (with McKee, Sean). Optimal stability functionals and their application to discretisation methods for Volterra integro-differential equations. 85g:65130
- Bainov, D. D. See Myahkha, A. D.; et al. 85g:34064
- Brunner, Hermann. Implicit Runge-Kutta methods of optimal order for Volterra integro-differential equations. 85m:85129
- Bulatov, V. I. Coalescing of solutions of systems with deviating argument. (Russian) 85d:34071
- Chalkovskii, M. V. (with Yanovich, L. A.). Numerical solution of second-order integro-differential equations of Volterra type. (Russian. English summary) 85b:65114
- Denisenko, N. V. (with Yanovich, L. A.). One-step numerical methods for solving systems of second-order linear integro-differential equations of Volterra type. (Russian) 85d:65070
- Algorithms for numerical solution of linear integro-differential equations based on their reduction to integral equations. (Russian) 85i:65169
- Dixon, J. (with McKee, Sean). Repeated integral inequalities. 85h:26030
- Dahalalova, S. N. See Magomedov, G. M. 85d:45016
- Gadshiev, G. A. See Salmanov, K. A. 85e:45002
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- Grimmer, R. C. (with Pritchard, A. J.). Analytic resolvent operators for integral equations in Banach space. 85k:45023
- (with Schappacher, W.). Weak solutions of integro-differential equations and resolvent operators. 85k:45024
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- Huang, Qi Chang. Uniform behavior of the solutions of functional-differential equations with unbounded delay. (Chinese. English summary) 85h:34067
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- Kang, Shi Kun. See Zhang, Shi Sheng. 85c:80090
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- Magomedov, G. M. (with Dzhahalova, S. N.) Some classes of nonlinear singular integro-differential equations. (Russian) 85d:45010
- McKee, Sean. See Andrade, C., 85g:65130 and Dixon, J., 85h:20020
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- Tikhonenko, N. Ya. On the approximate solution of interior boundary value problems with shift. (Russian) 85j:30087
- Wollenfett, P. H. M. On the relation between the repetition factor and numerical stability of direct quadrature methods for second kind Volterra integral equations. 85c:65063
- Yavin, Y. Numerical solution to two nonlinear partial integro-differential equations. (See 85g:65011)

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- Diekmann, O. (with van Gils, S. A.) Invariant manifolds for Volterra integral equations of convolution type. 85b:45026
- van Gils, S. A. See Diekmann, O., 85b:45026
- Londen, S.-O. On an integral equation with  $L^\infty$ -perturbation. 85g:45024

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- Atkinson, Colin See Lai, Han Ch'ing; et al., 85f:45018
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- Hwang, George R. See Lai, Han Ch'ing; et al., 85f:45018
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- Mascarenhas, Maria Luísa A linear homogenization problem with time dependent coefficient. 85c:45002
- Silbermann, Bernd See Böttcher, Albrecht, 85c:47035
- Talpalars, Pavel On asymptotic equivalence of integro-differential systems. 85d:45019
- Yakubovich, V. A. Abstract theory of absolute stability and its applications. (Russian) 85b:63039
- Yanagiya, Akira On some integro-differential equations. 85j:45024
- Yang, Shu Shih See Lai, Han Ch'ing; et al., 85f:45018

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- Burton, Theodore Allen (with Mahfoud, W. E.) Instability and stability in Volterra equations. (See 85c:34003)
- Dosumov, T. B. On the theory of stability of solutions of a Fredholm equation of the first kind. (Russian) 85j:45031
- Mahfoud, W. E. See Burton, Theodore Allen, (85c:34003)
- Nasyrov, I. S. Construction of small solutions of a nonlinear integral equation by the method of branching iterations. (Russian) 85i:45018
- Pozio, M. Assunta Behavior of solutions of some spatially dependent integro-differential equations. 85c:45025
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- Gopalsamy, K. Stability, instability, oscillation and nonoscillation in scalar integro-differential systems. 85k:45018
- Global asymptotic equivalence in Volterra's population systems. 85j:92028
- Londen, S.-O. On some integral equations with locally finite measures and  $L^\infty$ -perturbations. 85j:45005

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- Atdaev, S. On the theory of solutions of nonlinear equations with a Volterra operator on the half axis. (Russian) 85h:45027
- Da Prato, G. (with Iannelli, Mimmo; Sinestrari, Eugenio) Temporal regularity for a class of integro-differential equations in Banach spaces. (Italian summary) 85b:45017
- (with Iannelli, Mimmo) Distribution resolvents for Volterra equations in a Banach space. 85c:45021
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- (with Schappacher, W.) Weak solutions of integro-differential equations and resolvent operators. 85k:45024
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- Hönl, Chaim Samuel On the regularity of the solutions of linear Stieltjes-integral equations. 85c:45014
- Hulbert, Douglas S. (with Reich, Simeon) Ergodic theorems for nonlinear Volterra integral equations. (See 85c:34003)
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- Nikol'skaya, L. N. Stability of eigenvalues of certain types of singular integral equations. (Russian. English summary) 85m:45016
- Nohel, John A. See Londen, S.-O., (85c:34003)
- Nyaga, V. I. Singular integral equations in spaces with a weight. (Russian) 85i:45019
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- Reich, Simeon See Hulbert, Douglas S., (85c:34003)
- Schappacher, W. See Grimmer, R. C., 85k:45024
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- Kamp, W. P. (with Lorents, Rudolph A.; Rejto, P. A.) Integral operators and n-widths. (See 85g:41002)  
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 Paataashvili, V. A. (with Khushkivadze, G. A.) Boundedness of a singular Cauchy operator in Lebesgue spaces in the case of nonsmooth contours. (Russian) 85f:45021  
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 Wang, Sheng Wang Some properties of Nemytskii operators. (Chinese) (Not in MR)

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- Abdullaev, S. K. A multidimensional singular integral over a bounded  $m$ -dimensional domain. (Russian) 85g:45009  
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#### 46-XX FUNCTIONAL ANALYSIS (For manifolds modeled on topological linear spaces, see 57N20, 58Bxx.)

##### 46-01 Elementary exposition; textbooks

- Brézis, H. ★ Analyse fonctionnelle. (French) [Functional analysis] 85a:46001  
 Cryer, Colin W. ★ Numerical functional analysis. 85g:46001  
 Kanwal, Ram P. ★ Generalized functions. 85f:46001  
 Kutateladze, S. S. ★ Основы функционального анализа. (Russian) [Foundations of functional analysis] 85b:46001  
 Marek, Ivo (with Žitný, Karel) ★ Matrix analysis for applied sciences. Vol. 1. 85i:46001  
 Nowinski, J. L. ★ Applications of functional analysis in engineering. 85e:46001  
 Panzone, R. ★ Lecciones preliminares de análisis funcional. (Spanish) [Introductory lessons in functional analysis] 85a:46002  
 Petersen, Bent E. ★ Introduction to the Fourier transform & pseudodifferential operators. 85d:46001  
 Reed, Michael C. (with Simon, Barry) ★ Methods of modern mathematical physics. I. 85e:46002  
 Simon, Barry See Reed, Michael C., 85e:46002  
 Žitný, Karel See Marek, Ivo, 85i:46001

##### secondary classifications (46-01)

- Buchwalter, Henri (with Tarral, D.) Théorie spectrale. [Spectral theory] 85c:47001  
 Diestel, Joseph ★ Sequences and series in Banach spaces. 85i:46020  
 Goodearl, K. R. ★ Notes on real and complex  $C^*$ -algebras. 85d:46079  
 Kadison, Richard V. (with Ringrose, John R.) ★ Fundamentals of the theory of operator algebras. Vol. I. 85j:46009  
 Nikol'skii, S. M. ★ Курс математического анализа. Том II. [Course in mathematical analysis. Vol. II] 85f:00001b  
 Oberguggenberger, Michael ★ Der Graphensatz in lokalconvexen topologischen Vektorräumen. (German) [The graph theorem in locally convex topological vector spaces] 85g:46009  
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 Schwartz, Laurent ★ Cours d'analyse. 1. (French) [Course in analysis. 1] 85d:00001a  
 ★ Cours d'analyse. 2. (French) [Course in analysis. 2] 85d:00001b  
 Stanković, Bogoljub (with Pilipović, Stevan) ★ Teorija distribucija. (Serbo-Croatian) [Theory of distributions] 85f:46079  
 Tarral, D. See Buchwalter, Henri, 85c:47001  
 Wilansky, Albert ★ Summability through functional analysis. 85d:40006

##### 46-02 Advanced exposition (research surveys, monographs, etc.)

- (Khavin, V. P.) See Problems: Linear and complex analysis, 85k:46001  
 (Khrushchëv, S. V.) See Problems: Linear and complex analysis, 85k:46001  
 (Nikol'skii, N. K.) See Problems: Linear and complex analysis, 85k:46001  
 Pietsch, Albrecht Open problems, presented at the fifth seminar Poland-GDR on operator ideals and geometry of Banach spaces, Georgenthal, October 26-November 4, 1981. (Not in MR)  
 Problems:  
 Linear and complex analysis ★ Linear and complex analysis problem book. 85k:46001

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- Kadison, Richard V. (with Ringrose, John R.) ★ Fundamentals of the theory of operator algebras. Vol. I. 85j:46009  
 Musielak, Julian ★ Orlicz spaces and modular spaces. 85m:46028  
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 Triebel, Hans ★ Theory of function spaces. 85k:46020  
 Uchiyama, Akihito On BMO. (Japanese) 85j:42001  
 Wilansky, Albert ★ Summability through functional analysis. 85d:40006

##### 46-03 Historical (must also be assigned at least one classification number from Section 01)

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- Beov, O. V. Theory of differentiable functions of several variables (embedding theorems). (Russian) (See 85g:01004)  
 Blei, Ron C. Functions of bounded variation and fractional dimension. 85g:43003  
 Gindikin, S. G. (with Kirillov, A. A.) Algebraic aspects of functional analysis. (Russian) (See 85g:01004)  
 Gray, J. D. The shaping of the Riesz representation theorem: a chapter in the history of analysis. 85m:01042  
 Järvinen, Richard D. Mathematics history and mathematicians: the case of functional analysis. 85d:01004  
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Lund ★ Interpolation spaces and allied topics in analysis. 85g:46003

New Haven, Conn. ★ Proceedings of the conference on Banach algebras and several complex variables. 85h:46003

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(Uhlmann, Armin) See Proceedings: International conference on operator algebras, ideals, and their applications in theory. 85g:00027

(Zhishashvili, L. V.) See Some problems in the theory of functions. 85g:42001

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Canberra ★ Miniconference on operator theory and partial differential equations. 85g:00024

#### Conference:

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Operator algebras, ideals, and their applications in theoretical physics ★ Proceedings of the second international conference on operator algebras, ideals, and their applications in theoretical physics. 85g:00027

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Leipzig ★ Proceedings of the second international conference on operator algebras, ideals, and their applications in theoretical physics. 85g:00027

#### Proceedings:

International conference on operator algebras, ideals, and their applications in theoretical physics ★ Proceedings of the second international conference on operator algebras, ideals, and their applications in theoretical physics. 85g:00027

Some problems in the theory of functions ★ Некоторые вопросы теории функций. Том I. (Russian) [Some problems in the theory of functions. Vol. I] 85g:42001

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#### 46Axx Topological linear spaces

##### 46A05 Locally convex spaces

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Manón, José M. Hereditary properties of two new classes of spaces. (Spanish. English summary) 85j:46002

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- Nguyen Van Khue On the extension of holomorphic functions on a locally convex space. 85k:46055
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- Kusraev, A. G. Openness of convex measurable correspondences. (Russian) 85c:46005
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- Beukers, F. (with Huijsmans, C. B.; de Pagter, Ben) Unital embedding and complexification of  $f$ -algebras. 85c:06016  
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- Bonet, José A note on the spaces  $\mathcal{P}(\mathbb{R}^n, E)$  and  $S(\mathbb{R}^n, E)$ . (Spanish) 85j:46063  
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- Janson, Svante (with Nilsson, Per; Peetre, Jaak) Notes on Wolff's note on interpolation spaces. 85k:46083
- Johnson, Raymond L. Definition of generalized Carleson measures and applications. 85m:42024
- Jones, Peter Wilcox Interpolation between Hardy spaces. 85a:42029
- König, Helms On some basic relations in the abstract Hardy algebra theory. 85m:46053
- Korenblum, Boris A generalization of two classical convergence tests for Fourier series, and some new Banach spaces of functions. 85c:42004
- Leach, Ronald J. See Campbell, Douglas M., 85i:30067
- Lohoué, N. (with Rychener, Th.) Some function spaces on symmetric spaces related to convolution operators. 85d:22024
- Long, Rui Lin On the distance of  $f \in \text{BMO}$  from  $L^\infty$ . (Chinese) 85a:60051  
(with Yang, Le) BMO functions in spaces of homogeneous type. 85m:42022
- Matheson, Alec See Alapach, Dale E., 85e:46017
- Meise, Reinhold (with Vogt, Dietmar) Structure of spaces of holomorphic functions on infinite-dimensional polydisks. 85b:46052
- Nilsson, Per See Janson, Svante; et al., 85k:46083
- Nishihiraho, Toshihiko Convergence of positive linear approximation processes. 85i:41024
- Parczyński, Krystyna Strong topology on the automorphisms group of the Lebesgue space. 85e:28031
- Peetre, Jaak Hankel operators, rational approximation and allied questions of analysis. 85h:47037  
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- Phillips, G. M. See Holland, A. S. B.; et al., 85g:26011
- Pitt, Loren D. A general approach to approximation problems of the Bernstein type. 85h:41082
- Poppe, H. (with Stärk, Andreas) A compactness criterion for the space of almost periodic functions. II. 85a:43007
- Rutikaf, Ya. B. See Berkolaiko, M. Z., 85d:47030
- Rychener, Th. See Lohoué, N., 85d:22024
- Solov'ev, A. A. Continuity of the harmonic projection in  $L^p$ -spaces. (Russian. English summary) 85g:30087
- Stärk, Andreas See Poppe, H., 85a:43007
- Swardson, Mary Anne See Blair, Robert L., 85k:54020
- Taylor, Peter J. See Holland, A. S. B.; et al., 85g:26011
- Tasin, E. M. Spaces of the type of James's tree. (Russian. English summary) 85f:46038
- Vogt, Dietmar See Meise, Reinhold, 85b:46052
- Yang, Le See Long, Rui Lin, 85m:42022
- (Zafra, Misha) See Janson, Svante; et al., 85k:46083

#### 46Fxx Distributions, generalized functions, distribution spaces (For distribution theory on nonlinear spaces, see 58Cxx.)

- Lodder, J. J. A simple model for a symmetrical theory of generalized functions. I. Definition of singular generalized functions. 85g:46047a  
A simple model for a symmetrical theory of generalized functions. II. Operators on generalized functions. 85g:46047b  
A simple model for a symmetrical theory of generalized functions. III. Products of generalized functions. 85g:46047c  
A simple model for a symmetrical theory of generalized functions. IV. Some extensions and conclusions. 85g:46047d  
A simple model for a symmetrical theory of generalized functions. V. Some applications. 85g:46047e
- Pilipović, Stevan See Stanković, Bogoljub, 85f:46079
- Stanković, Bogoljub (with Pilipović, Stevan) ★ Teorija distribucija. (Serbo-Croatian) [Theory of distributions] 85f:46079
- secondary classifications (46Fxx)
- Brackx, F. (with Delanghe, Richard; Sommen, F.) ★ Clifford analysis. 85j:30103
- Delanghe, Richard See Brackx, F.; et al., 85j:30103
- Ehrenpreis, Leon Conformal geometry. 85f:53017
- Hörmander, Lars ★ The analysis of linear partial differential operators. I. 85g:35002a
- Kanwal, Ram P. ★ Generalized functions. 85f:46001
- Lodder, J. J. Quantum-electrodynamics without renormalization. I. Evaluation of the integrals. 85k:81213a  
Quantum-electrodynamics without renormalization. II. Evaluation of lowest order diagrams. 85k:81213b  
Quantum-electrodynamics without renormalization. III. Vacuum polarization and the mass of the photon. 85k:81213c  
Quantum-electrodynamics without renormalization. IV. Comparison with renormalized quantum-electrodynamics. 85k:81213d

- Petersen, Bent E. ★ Introduction to the Fourier transform & pseudodifferential operators. 85d:46001
- Sommen, F. See Brackx, F.; et al., 85j:30103
- Synowicz, John Distributions: the evolution of a mathematical theory. (French and German summaries) 85a:01051

#### 46F05 Topological linear spaces of test functions and distributions

- Bauch, Hans F. Test functions and generalized functions on topological groups. IV. 85g:46045
- Bonet, José A note on the spaces  $\mathcal{P}(\mathbb{R}^n, E)$  and  $\mathcal{S}(\mathbb{R}^n, E)$ . (Spanish) 85j:46003  
(with Maestre, Manuel) Representations of the spaces  $\mathcal{B}_0(\Omega, E)$  and  $\mathcal{B}_1(\Omega, E)$ . (Spanish. English summary) 85c:46034
- Collier, M. G. (with Kelings, A.) Periodic Beurling distributions. 85f:46080
- Dierolf, Peter (with Dierolf, Susanne) Topological properties of the dual pair  $(\mathcal{B}'(\Omega)', \mathcal{B}'(\Omega)'')$ . 85c:46030  
Some locally convex spaces of regular distributions. 85g:46049
- Dierolf, Susanne See Dierolf, Peter, 85c:46030
- van Eijndhoven, S. J. L. ★ Analyticity spaces, trajectory spaces and linear mappings between them. 85h:46056  
(with de Graaf, J.; Pathak, R. S.) A characterization of the spaces  $\mathcal{S}_{1/(k+1)}^{k/(k+1)}$  by means of holomorphic semigroups. 85i:46046
- de Graaf, J. See van Eijndhoven, S. J. L.; et al., 85i:46046
- Kelings, A. See Collier, M. G., 85f:46080
- Maestre, Manuel Certain subspaces of  $\mathcal{E}(Q, E)$ . (Spanish) 85j:46064  
See also Bonet, José, 85c:46034
- Meisters, Gary Hoeler Some problems and results on translation-invariant linear forms. 85c:46035
- Musiela, Julian On sequentially  $M$ -integrable distributions. 85h:46057
- Pathak, R. S. See van Eijndhoven, S. J. L.; et al., 85i:46046
- Pilipović, Stevan A characterization of the space  $\mathcal{D}'_f$ . 85g:46050  
An analytic characterization of the space of generalized functions which have a Laguerre expansion. (Serbo-Croatian summary) 85f:46081
- Sikk, J. The space of Fourier-Schwartz series with an asymptotic condition. (Russian. English summary) 85i:46047

secondary classifications (46F05)

- Doktor, P. About some Sobolev spaces with weight and their duals. 85d:46039
- Nakanishi, Shisu On ranked union spaces and dual spaces. 85e:46006

#### 46F10 Operations with distributions

- Abramczuk, Wojciech A class of surjective convolution operators. 85k:46042
- Akhmedov, Sh. A. An analogue of Malgrange's theorem. (Russian. Tajiki summary) 85k:46043
- Berenstein, Carlos A. (with Yger, A.) Le problème de la déconvolution. [The deconvolution problem] 85i:46045
- Berg, L. Differentiationsalgebren mit einem kubischen Element. (English and Russian summaries) [Differentiation algebras with a cubic element] 85e:46031  
Taylor's expansion in a distribution algebra. (German and Russian summaries) 85i:46049
- Distribution algebras with periodic matrix representations. (Not in MR)
- Chuburin, Yu. P. The improper integral of generalized functions. (Russian) 85i:46050
- Ciorănescu, Ioana (with Zaidó, László)  $\omega$ -ultradistributions and their application to operator theory. 85j:46065
- Colombeau, J.-F. Une multiplication générale des distributions. (English summary) [A general multiplication of distributions] 85d:46054  
A multiplication of distributions. 85d:46053
- Di Pasquantonio, Filippo (with Lavoine, Jean) The change of variables in distributions. (Italian. English summary) 85h:46058
- Fisher, Brian On the Dirac delta-function. 85k:46044d  
The noncommutative neutrix product of the distributions  $x_+^{-r}$  and  $\delta^{(p)}(x)$ . 85k:46044a  
The neutrix distribution product  $x_+^\lambda \circ x_+^m$ . 85k:46045  
Some neutrix products of distributions. 85j:46066  
On defining the distribution  $\delta^{(r)}(f(x))$ . 85k:46044b  
(with Kuribayashi, Yukio) Theorems on the noncommutative neutrix product of distributions. 85k:46044c
- de Graaf, J. A theory of generalized functions based on holomorphic semigroups. I. Introduction and survey. 85i:46051
- Imanaliyev, M. I. (with Pankov, P. S.) On the question of determination of one-sided delta functions in a complex domain. (Russian) 85j:46067
- Itano, Mitsuyuki On the canonical extensions for distributions in the space  $B_{p,\mu}$ . 85m:46036
- Keller, Klaus Some convergence properties of convolutions. 85h:46059
- Kuribayashi, Yukio See Fisher, Brian, 85k:46044c
- Lavoine, Jean See Di Pasquantonio, Filippo, 85h:46058
- Löffel, Jörgen Applications of a general comparison theorem for convolution integrals. 85i:46052
- Maillard, J.-M. Sur le produit de convolution gauche et la transformée de Weyl des distributions tempérées. (English summary) [Twisted convolution product and Weyl transform of tempered distributions] 85i:46053
- Marques, M. D. P. M. Sur la condition de Legendre-Hadamard et les formes biquadratiques positives. [The Legendre-Hadamard condition and positive biquadratic forms] 85c:46036
- Mäulen, J. Characterization of the gradient of a distribution. 85b:46046
- Nakagami, Keiko Integration and differentiation of  $\delta$ -function. II. 85e:46032a  
Integration and differentiation of  $\delta$ -function. III. 85e:46032b
- Napalkov, V. V. Inhomogeneous convolution equations. (Russian) 85h:46060

- Neagu, M.  $\alpha$ -convolution products of distributions. (Romanian. French summary) 85d:46055
- Niu, Pei Ping The product of distributions, and some differential equations. (Chinese. English summary) 85d:46046
- Ortner, Norbert Eine  $\delta$ -Folge. [A  $\delta$ -sequence] 85b:46047
- Pankov, P. S. See Imanaliev, M. I., 85j:46067
- Raju, C. K. On the square of  $x^{-n}$ . 85b:46047
- Rosano, Yu. A. Some generalizations of the Dirichlet problem. (Russian) 85j:46068
- Shelkovich, V. M. An algebra of distributions connected with a light cone. (Russian) 85b:46061
- Struppa, Daniele Carlo The fundamental principle for systems of convolution equations. 85b:46062
- Samydt, Zofia Characterization of regular tempered distributions. 85b:46048
- Trione, Susana Elena  $\star$  Distributional products. 85g:46051
- On some distributional multiplicative products. 85j:46069
- Yger, A. See Berenstein, Carlos A., 85i:46048
- Zaslavskii, A. I. Coefficients of the asymptotic expansion of products of homogeneous distributions. (Russian) 85d:46058
- Multiplicable distributions. (Russian) 85d:46057
- Zeidé, László See Ciernescu, Ioana, 85j:46065

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- Barbey, Klaus Periodically invariant linear systems. 85c:93011
- Barrar, R. B. (with Loeb, H. L.) Lifting a distribution. (See 85g:41002)
- Carmignani, Robert Distributional inequalities and van der Corput's lemma. 85f:26014
- Carroll, Robert Wayne Partial differential equation techniques in transmutation. 85j:35202
- Collier, M. G. (with Kelngos, A.) Periodic Beurling distributions. 85f:46060
- Fedak, L. V. The generalized Dirichlet problem for differential equations with constant coefficients in some classes of generalized functions. (Russian) 85f:35047
- Gall, I. M. Integral representation of  $G$ -invariant positive-definite kernels on a group  $G^n$ . 85b:43005
- Gindikin, S. G. See Volevich, L. R., 85j:47055
- von Grudinski, Olaf Slowly decreasing entire functions and convolution equations. 85j:30058
- Halle, G. About the connection between the neutrix theory and a remarkable construction in mathematical analysis. (Romanian summary) 85i:20058
- Hansen, Sönke On the "fundamental principle" of L. Ehrenpreis. 85b:35054
- Kalinin, S. I. Approximation of the solution of a homogeneous convolution equation whose characteristic function satisfies lower estimates. (Russian) 85d:30058
- Kammerer, Jean-Bertrand L'algebre des operateurs de multiplication du star-produit de  $\mathbb{R}^{2n}$ . (English summary) [The algebra of multiplication operators of the star-product in  $\mathbb{R}^{2n}$ ] 85m:58082
- Kelngos, A. See Collier, M. G., 85f:46060
- Kierat, W. Some Fourier transform inversion theorem. 85d:42023
- Koshleva, T. M. A general boundary value problem for an  $m$ -order ordinary differential equation in the class of generalized functions. (Russian) 85i:34034
- Kuleshov, A. A. Linear equations in spaces of generalized periodic functions. (Russian) 85j:35046
- Lang, Guido (with Lesniewski, Andrzej) Axioms for renormalization in Euclidean quantum field theory. 85m:81111
- Lesniewski, Andrzej See Lang, Guido, 85m:81111
- Loeb, H. L. See Barrar, R. B., (85g:41002)
- Ma, Xiu Qing (with Wang, Shu Tang) Application of a generalized number system in quantum statistical mechanics. (Chinese. English summary) 85d:82033
- Malakhovskaya, R. M.  $\star$  Алгебраическое операционное исчисление и его приложения. Часть 1. (Russian) [Algebraic operational calculus and its applications. Part 1] 85g:44006
- Marion, Jean  $G$ -distributions et  $G$ -intégrales multiplicatives sur une variété. [Multiplicative  $G$ -distributions and  $G$ -integrals on a manifold] 85i:22035
- Miyachi, Akihiko Notes on Fourier multipliers for  $H^p$ , BMO and the Lipschitz spaces. 85j:42029
- Schmidt, Adam Zur "Differentialgleichung"  $(\partial/\partial y)S = T$  im Bereich der Distributionen. (English, French and Russian summaries) [On the "differential equation"  $(\partial/\partial y)S = T$  in the domain of distributions] (Not in MR)
- Shah, Swarupchand M. (with Wiener, Joseph) Distributional and entire solutions of ordinary differential and functional-differential equations. 85c:34010
- Skórnik, Krystyna On local derivatives. 85j:26015
- Tolokonnikov, G. K. On differential rings used in Yu. M. Shirokov's algebras. (Russian) 85c:12008
- Volevich, L. R. (with Gindikin, S. G.) Convolution in spaces of distributions and related problems for convolution equations. 85j:47055
- Wang, Shu Tang See Ma, Xiu Qing, 85d:82033
- Wen, Jing A note on complex powers of the Laplace operator, wave operator and heat operator. (Chinese. English summary) 85k:35050
- Wiener, Joseph See Shah, Swarupchand M., 85c:34010

## 46F12 Integral transforms in distribution spaces [See also 42-XX, 44-XX.]

- Chaudhry, Muhammad Aslam See Pandey, J. N., 85d:46058
- Li, Ya Qing Some results on products of distributions. (Chinese) (Not in MR)
- Pandey, J. N. (with Chaudhry, Muhammad Aslam) The Hilbert transform of generalized functions and applications. 85d:46058
- Rafi, Mohammed A generalized Weierstrass transform  $\omega_\lambda$  of a class of generalized functions. 85f:46082
- Sundaram, Kokila Inversion theorem for the Whittaker-transform of certain distributions. 85f:46083
- Veber, V. K. Passivity of linear systems of differential equations with fractional derivative, and quasiasymptotic behavior of solutions. (Russian) 85c:46037

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- Fenyő, István Some remarks on the theory of the Laguerre-Pinney transformation. 85c:44093
- Kuo, Hui Hsiung Fourier-Mehler transforms of generalized Brownian functionals. 85d:60153
- Lall, A. B. B. See Verma, T. N., 85c:44005
- Malgoude, S. P. (with Saxena, Rajendra Kumar) Some abelian theorems for the distributional  $H$ -transformation. 85b:44007
- Rao, G. L. N. A unification of generalizations of the Laplace transform and generalized functions. 85c:44001
- Samko, S. G. Singular integrals over a sphere and the construction of the characteristic from the symbol. (Russian) 85f:42027
- Saxena, Rajendra Kumar See Malgoude, S. P., 85b:44007
- Takaei, Arpad A note on the distributional Stieltjes transformation. 85d:44006
- Verma, T. N. (with Lall, A. B. B.) A convolution formula for the distributional Laguerre transform. 85c:44005
- Zalik, R. A. Remarks on a paper of Gelfand and Šilov on Fourier transforms. 85b:42013

## 46F15 Hyperfunctions, analytic functionals [See also 32A25, 32A45, 32C35, 58C07.]

- Morimoto, Mitsuo Analytic functionals on the sphere and their Fourier-Borel transformations. 85j:46070
- Petsche, Hans-Joachim Generalized functions and the boundary values of holomorphic functions. 85k:46048
- Sommen, F. Hyperfunctions with values in a Clifford algebra. 85m:46037

## secondary classifications (46F15)

- Katsoka, Kiyōmi Some properties of mild hyperfunctions and an application to propagation of micro-analyticity in boundary value problems. 85k:58071
- McCoy, Peter A. Characterization of solutions to the generalized Cauchy-Riemann system. 85c:31004
- Mérel, Alex Problèmes d'interpolation dans quelques espaces de fonctions non entières. (English summary) [Interpolation problems in some spaces of nonentire functions] 85i:46045
- Ryan, John Cauchy-Kowalewski extension theorems and representations of analytic functionals acting over special classes of real  $n$ -dimensional submanifolds of  $\mathbb{C}^{n+1}$ . 85k:32029
- Sommen, F. Microfunctions with values in a Clifford algebra I. 85b:30062
- Yoshino, Kunio Lerch's theorem for analytic functionals with noncompact carrier and its applications to entire functions. 85j:30062
- Polya's theorem for nonentire functions. 85c:32002
- Zharinov, V. V. Distributive lattices and their applications in complex analysis. (Russian) 85j:33010

## 46F20 Distributions as boundary values of analytic functions

[See also 30Exx, 32A40.]

- Leubin, Pascal Front d'onde analytique et décomposition microlocale des distributions. (English summary) [Analytic wave front and microlocal decomposition of distributions] 85d:46059
- Mikusiński, Piotr Convergence of Boehmians. 85b:46063
- Mitrović, Dragika A behavior of the Cauchy representation of distributions. 85j:46071
- Pathak, R. S. Corrigenda: "Cauchy and Poisson integral representations for ultradistributions of compact support and distributional boundary values" [Proc. Roy. Soc. Edinburgh Sect. A 91 (1981/82), no. 1-2, 49-62; MR 83i:46044]. 85c:46038
- Petsche, Hans-Joachim Generalized functions and boundary values of holomorphic functions. 85i:46054
- (with Vogt, Dietmar) Almost analytic extension of ultradifferentiable functions and the boundary values of holomorphic functions. 85j:46072
- Vogt, Dietmar See Petsche, Hans-Joachim, 85j:46072

## secondary classifications (46F20)

- Carmichael, Richard D. Generalization of  $H^p$  functions in tubes. II. 85i:32006
- Chaudhry, Muhammad Aslam See Pandey, J. N., 85d:46058
- Pandey, J. N. (with Chaudhry, Muhammad Aslam) The Hilbert transform of generalized functions and applications. 85d:46058
- Petsche, Hans-Joachim Generalized functions and the boundary values of holomorphic functions. 85k:46048
- Shelkovich, V. M. An algebra of distributions connected with a light cone. (Russian) 85b:46061
- Zaslavskii, A. I. Multiplicable distributions. (Russian) 85d:46057
- 46F25 Distributions on infinite-dimensional spaces [See also 58C35.]
- Kondrat'ev, Yu. G. (with Tsikalenko, T. V.) Fundamental and generalized functions on dually nuclear spaces. (Russian) 85b:46064
- Tsikalenko, T. V. See Kondrat'ev, Yu. G., 85b:46064

## secondary classifications (46F25)

- Üstünel, A. S. Additive processes on nuclear spaces. 85j:60141
- 46F99 None of the above, but in this section
- Feichtinger, Hans G. Banach spaces of distributions having a pointwise and a convolutive module structure. 85m:46038
- secondary classifications (46F99)
- Arthur, James On a family of distributions obtained from Eisenstein series. II. Explicit formulas. 85d:22033



On a family of distributions obtained from Eisenstein series. I. Application of the Paley-Wiener theorem. **85k:23044**

Droste, Bernd A new proof of the support theorem and the range characterization for the Radon transform. **85b:44003**

Fortet, R. Harmonic analysis of random distributions. **85e:60049**

Haf, H. Stetigkeitsmodul und Lipschitzklassen in  $L_p$ -Distributionenräumen. [Moduli of continuity and Lipschitz classes in  $L_p$ -distribution spaces] **85m:41035**

#### 46Gxx Measures, integration, derivative, holomorphy (For integration on infinite-dimensional spaces, see 28C20; for nonlinear functional analysis, see 58-XX, especially 58Cxx.)

##### 46G05 Derivatives

Bentkus, Vidmantas-Kastytis Jurgio Differentiable functions in spaces  $c_0$  and  $R^k$ . (Russian. English and Lithuanian summaries) **85g:46052**

Christensen, Jens Peter Reus (with Kenderov, Pet' S.) Dense Fréchet differentiability of Mackey continuous convex functions. **85i:46055**

Colombeau, J.-F. (with Paques, Otilia Wiermann) Finite-difference partial differential equations in normed and locally convex spaces. **85f:46084**

(with Perrot, B.) Convolution equations in spaces of polynomials on locally convex spaces. **85c:46039**

Diaconu, Adrian Sur quelques propriétés des dérivées de type Fréchet d'ordre supérieur. [Some properties of higher-order Fréchet-type derivatives] **85g:46053a**

Sur la dérivée de type Fréchet de l'application composée. [Fréchet-type derivative of the composite mapping] **85g:46053b**

Sur la dérivée de type Fréchet d'ordre  $n$  de l'application inverse. [The  $n$ -order Fréchet-type derivative of the inverse mapping] **85g:46053c**

Fitspatrick, Simon Differentiation of real-valued functions and continuity of metric projections. **85m:46039**

García Lafuente, J. M. Total and partial differentiation in nonnormable spaces. (Spanish) (See **85g:00026**)

Ioffe, A. D. Calculus of Dini subdifferentials of functions and contingent coderivatives of set-valued maps. **85k:46049**

Kenderov, Pet' S. See Christensen, Jens Peter Reus. **85i:46055**

Levanov, V. A. The structure of subdifferentials. (Russian) **85h:46005**

Marques, M. D. P. M. Dualité et sous-différentiabilité de fonctionnelles construites au moyen d'un opérateur divergence. [Duality and subdifferentiability of functionals constructed by means of a divergence operator] **85k:46050**

Paques, Otilia Wiermann See Colombeau, J.-F., **85f:46084**

Perrot, B. See Colombeau, J.-F., **85c:46039**

Preis, David Gâteaux differentiable functions are somewhere Fréchet differentiable. **85k:46051**

##### secondary classifications (46G05)

Balabanov, V. A. On the theory of implicit functions in pseudotopological vector spaces. (Russian. English summary) **85f:58007**

Borisenko, O. F. (with Minchenko, L. I.) Directional differentiability of the maximum function. (Russian) **85d:58009**

Dyachkin, O. D. Solution by the parametrix method of parabolic equations with respect to measures and functions on a Hilbert space. (Russian) **85k:35221**

Frölicher, Alfred (with Gisin, Bernard; Kriegl, Andreas) General differentiation theory. **85f:58008**

Prolov, N. N. Smoothness of the generalized solution of the Dirichlet problem for an infinite-dimensional differential operator. (Russian) **85j:35187**

Gisin, Bernard See Frölicher, Alfred; et al., **85f:58008**

Hamilton, E. P. (with Nashed, M. Zuhair) Variational derivatives and  $p$ -gradients of functionals on spaces of continuously differentiable functions. **85c:49009**

Kriegl, Andreas See Frölicher, Alfred; et al., **85f:58008**

Kuzaev, A. G. Some rules for calculation of tangent cones. (Russian) **85d:58010**

The subdifferential of a sum. (Russian) **85m:49045**

Minchenko, L. I. See Borisenko, O. F., **85d:58009**

Nashed, M. Zuhair See Hamilton, E. P., **85c:49009**

Norin, N. V. Heat potentials on a Hilbert space. (Russian) **85i:46059**

Pian, J. (with Sharma, C. S.) Calculus on complex Banach spaces. **85g:58013**

Radyno, Ya. V. ★ Линейные уравнения и борнология. (Russian) [Linear equations and bornology] **85d:46006**

Rodé, G. (with Simons, Stephen) Directional derivatives and variational inequalities. **85f:49029**

Samoilenko, Yu. S. (with Us, G. F.) Differential operators with constant coefficients on functions of a countable number of variables. (Russian) **85k:35222**

Sharma, C. S. See Pian, J., **85g:58013**

Shcherbin, V. M. Partial derivatives and higher-order derivatives for mappings of  $K$ -spaces. The Taylor theorem. (Russian) **85e:58019**

Simons, Stephen See Rodé, G., **85f:49029**

Skórnik, Krystyna On local derivatives. **85j:26015**

Stroyan, K. D. Locally convex infinitesimal calculus. II. Computations on Mackey ( $^{fco}$ ). **85d:46099**

Taq, Kenan On the Gâteaux differentiability of the vector valued convex mappings. **85k:58010**

Thibault, Lionel On generalized differentials and subdifferentials of Lipschitz vector-valued functions. **85e:58020**

Truong Công Nghê An inverse mapping theorem for Sobolev chains and its application. **85c:58012**

Us, G. F. See Samoilenko, Yu. S., **85k:35222**

Ver Eecke, Paul ★ Fondements du calcul différentiel. (French) [Foundations of differential calculus] **85i:26001**

Zajítek, Luděk A generalization of an Ekeland-Lebourg theorem and the differentiability of distance functions. **85k:49046**

#### 46G10 Vector-valued measures and integration [See also 28Bxx, 46B22.]

Antosik, Piotr (with Swartz, Charles) A theorem on matrices and its applications in functional analysis. **85k:46052**

Drewnowski, Lech Boundedness of vector measures with values in the spaces  $L_0$  of Bochner measurable functions. **85f:46005**

Graves, W. H. (with Wheeler, R. F.) On the Grothendieck and Nikodým properties for algebras of Baire, Borel and universally measurable sets. **85i:46056**

Gulashvili, A. Estimates for the Pettis integral in interpolation spaces with some applications. **85d:46060**

Kiel, Heinz-Albrecht Le théorème de Radon-Nikodým pour des multi-mesures à valeurs faiblement compactes. (English summary) [The Radon-Nikodým theorem for set-valued measures having weakly compact values] **85f:46088**

Matasuda, Minoru On Sierpiński's function and its applications to vector measures. **85i:46057**

Nania, Luciana On the  $\Gamma$ -convergence for multiple integrals depending on vector valued functions. (Italian summary) **85j:46073**

Niemel, Hannu Orthogonally scattered dilations of finitely additive vector measures with values in a Hilbert space. **85h:46006**

Ohba, Sachio Integration with respect to vector measures. II. (Japanese summary) **85g:46054**

Ricker, Werner Closed spectral measures in Fréchet spaces. **85m:46040**

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- Krě, Mirella (with Krě, P.) Continuité de la divergence dans les espaces de Sobolev relatifs à l'espace de Wiener. (English summary) [Continuity of the divergence operator in Sobolev spaces on the Wiener space] 85g:46055

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- Christensen, Jens Peter Reus (with Kenderov, Pet'r S.) Dense strong continuity of mappings and the Radon-Nikodým property. 85k:46015

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- 46H70 Jordan-Banach algebras, Banach-Lie algebras
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- Fannes, M. (with Vanheuverzwijn, P.; Verbeure, A.) Quantum energy-entropy balance and breaking of symmetries. 85e:82014
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- Defant, Andreas (with Govaerts, Willy) Bornological and ultrabornological spaces of type  $C(X, F)$  and  $E \otimes F$ . 85j:46005
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- Botnaru, D. V. Composition and commutativity of reflexive functors. (Russian) 85m:46070
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- Dzhabrailova, R. P. See Bunyatov, M. R., 85f:46133
- Kim, Kyung Chan An exponential law for regular ordered Banach spaces. 85i:46061
- Ozawa, Masanao Boolean valued interpretation of Hilbert space theory. 85d:46094
- Pelletier, Joan Wick Applications of the dual functor in Banach spaces. 85m:46071
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- Frölicher, Alfred (with Gisin, Bernard; Kriegl, Andreas) General differentiation theory. 85f:58008
- Gisin, Bernard See Frölicher, Alfred; et al., 85f:58008
- Hartig, Donald G. The Riesz representation theorem revisited. 85c:46021
- Kriegl, Andreas Eine kartesisch abgeschlossene Kategorie glatter Abbildungen zwischen beliebigen lokalkonvexen Vektorräumen. (English summary) [A Cartesian-closed category of smooth mappings between arbitrary locally convex vector spaces] 85e:58018

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- Gillette, R. M. See Dupré, Maurice J., 85j:46127
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- Levi, R. N. Cohomology invariants of systems of essentially commuting operators. (Russian) 85g:46067
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- Nikolsho, P. V. A property of kernels of families of Noether operators representing elements from  $K(S^{2n})$ . (Russian) 85j:46129
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- Ringrose, John R. Cohomology theory for operator algebras. 85a:46040
- Rosenberg, Jonathan Homological invariants of extensions of  $C^*$ -algebras. 85h:46099
- Seda, Anthony Karel Sur les espaces de fonctions et les espaces de sections. (English summary) [On function spaces and spaces of sections] 85a:46041

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- Blackadar, Bruce A stable cancellation theorem for simple  $C^*$ -algebras. 85g:46086
- Brown, L. G. The universal coefficient theorem for Ext and quasidiagonality. 85m:46088
- Choi, M. D. Lifting projections from quotient  $C^*$ -algebras. 85c:46080
- Elliott, G. A. On the  $K$ -theory of the  $C^*$ -algebra generated by a projective representation of a torsion-free discrete abelian group. 85m:46067
- Fabec, R. C. Cocycles, extensions of group actions and bundle representations. 85k:22017
- Giffether, F. (with Hopenwasser, Alan; Larson, David R.) Reflexive algebras with finite width lattices: tensor products, cohomology, compact perturbations. 85g:47062
- Handelman, David (with Rosemann, Wulf) Product type actions of finite and compact groups. 85k:46077
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- Kitchen, J. W. (with Robbins, D. A.) Gelfand representation of Banach modules. 85g:46090
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- Kumjian, Alexander On localizations and simple  $C^*$ -algebras. 85k:46073
- Larson, David R. See Giffether, F.; et al., 85g:47062
- Mallios, Anastasios Vector bundles and  $K$ -theory over topological algebras. 85g:58084
- Mingo, J. A. (with Phillips, W. J.) Equivariant triviality theorems for Hilbert  $C^*$ -modules. 85k:46111
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- Petzsch, Hans-Joachim On the vanishing of cohomology groups with values in a product sheaf. 85f:32013
- Phillips, W. J. See Mingo, J. A., 85k:46111
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- Group  $C^*$ -algebras and topological invariants. 85g:22011
- Rosemann, Wulf See Handelman, David, 85k:46077
- Schochet, Claude Homogeneous extensions of  $C^*$ -algebras and  $K$ -theory. II. 85e:46035
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- Vershik, A. M. (with Kerov, S. V.) The  $K$ -functor (Grothendieck group) of the infinite symmetric group. (Russian. English summary) 85d:20014

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- (with Nilsson, Per; Peetre, Jaak) Notes on Wolff's note on interpolation spaces. 85k:46083
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- Lunardi, Alessandra Characterization of some interpolation spaces. (Italian summary) 85e:46136
- Characterization of some interpolation spaces. II. (Italian summary) 85f:46136b
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- Nikolova, L. I. The interpolation of operators of weakened type. (Russian. English summary) 85d:46096
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- Pustylnik, E. I. Optimal interpolation and some interpolation properties of Orlicz spaces. (Russian) 85g:46088
- Rochberg, Richard Interpolation of Banach spaces and negatively curved vector bundles. 85m:46077
- Function theoretic results for complex interpolation families of Banach spaces. 85m:46078
- Sagher, Yoram An application of the approximation functional in interpolation theory. 85k:46084a
- See also Cwikel, Michael, 85i:46100 and Milman, Marie, 85k:46084b
- Shevchik, V. V. (with Shnelberg, I. Ya.) The set of exceptional values of the parameter of interpolation of subspaces. (Russian) 85c:46068
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- Altenburg, G. Eine Realisierung der Theorie der abstrakten Besov-Räume  $B_q^s(A)$  ( $s > 0, 1 \leq q \leq \infty$ ) und der Lebesgue-Räume  $H_{p,\mu}^s$  auf der Grundlage Besselscher Differentialoperatoren. (English and Russian summaries) [A realization of the theory of abstract Besov spaces  $B_q^s(A)$  ( $s > 0, 1 \leq q \leq \infty$ ) and of the Lebesgue spaces  $H_{p,\mu}^s$  on the basis of Bessel differential operators] 85k:46029
- Arazy, Jonathan The  $K$ -functional of certain pairs of rearrangement invariant spaces. 85b:46036
- Ashyralyev, A. O. (with Sobolevskii, P. E.) The theory of interpolation of linear operators and the stability of difference schemes. (Russian) 85m:85046
- Astakhin, S. V. Description of interpolation spaces between  $(l_1(\omega^0), l_1(\omega^1))$  and  $(l_\infty(\omega^0), l_\infty(\omega^1))$ . (Russian) 85g:46024
- Auterhoff, Jürgen Interpolationseigenschaften des Spektrums linearer Operatoren auf  $L^p$ -Räumen. [Interpolation properties of the spectrum of linear operators on  $L^p$ -spaces] 85c:47030
- Berezhnoi, E. I. Geometric properties of the space  $\varphi(X, Y)$ . (Russian) 85j:46037
- Bergh, Jöran A nonlinear complex interpolation result. 85j:47009
- Browne, Patrick J. (with Costa, Claude)  $L^p$  spaces from matrix measures: a correction and their interpolation. 85d:46049
- Calderón, Alberto P. (with Milman, Mario) Interpolation of Sobolev spaces. The real method. 85b:46039
- Chashchin, O. N. Regularization of Volterra operator equations of the second kind in a scale of Banach spaces. (Russian) 85h:47011
- Costa, Claude See Browne, Patrick J., 85d:46049
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- DeVore, Ronald A. The  $K$  functional for  $(H_1, BMO)$ . 85m:46026
- Fehr, F. The Marcinkiewicz interpolation theorem for rearrangement-invariant function spaces and applications. (German and Russian summaries) 85b:46037
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- Ghoussoub, N. (with Johnson, W. B.) Counterexamples to several problems on the factorization of bounded linear operators. 85j:47046
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- Gulashvili, A. Estimates for the Pettis integral in interpolation spaces with some applications. 85d:46060
- Hernández, Eugenio An interpolation theorem for analytic families of operators acting on certain  $H^p$  spaces. 85f:47033
- Hoppe, Ronald H. W. Representations of fractional powers of infinitesimal generators of cosine operator functions. 85k:47081
- Jawerth, Björn The  $K$ -functional for  $H^1$  and  $BMO$ . 85j:42037
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- Kerman, R. A. An integral extrapolation theorem with applications. 85j:46041
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Semënov, E. M. (with Shteinberg, A. M.) Operator blocks in  $L_{p,q}$  spaces. (Russian) 85d:47032

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Tomarelli, Franco Weak solution for an abstract Cauchy problem of parabolic type. 85c:34067

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Lee, Sa Ge A general Calkin representation. (Korean summary) 85c:47045

Leptin, H. The structure of  $L^1(G)$  for locally compact groups. 85d:22015

Ménil, Alex Problèmes d'interpolation dans quelques espaces de fonctions non entières. (English summary) [Interpolation problems in some spaces of nonentire functions] 85i:46045

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Schmüdgen, Konrad Graded and filtrated topological  $\ast$ -algebras. I. Graded normal topologies. 85d:46077

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Allen, Beth Neighboring information and distributions of agents' characteristics under uncertainty. 85c:90012

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Banaś, József (with Hajnos, Andrzej; Wędrychowicz, Stanisław) On existence and asymptotic behavior of solutions of some functional equations. 85d:39007

Bartolewicz, Zbigniew Approximate controllability of neutral systems with delays in control. 85c:93015

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Bondio, Cristiana A Paley-Wiener theorem for ultradifferentiable functions on a symmetric space. 85i:43018

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Bratteli, Ola (with Jørgensen, Palle E. T.) Positive semigroups of operators, and applications: editors' introduction. (Not in MR)

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Burnap, C. The second Legendre transform of the  $P(\Phi)_2$  generating functional. 85c:81020

Busch, Paul On joint lower bounds of position and momentum observables in quantum mechanics. 85h:81004

Butsán, G. P. A class of stochastic semigroups. (Russian) 85k:60084

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Domar, Yngve Extensions of the Titchmarsh convolution theorem with applications in the theory of invariant subspaces. 85b:46062

Emch, Gérard G. Geometric dequantization and the correspondence problem. 85b:81081

de Figueiredo, Rul J. P. A generalized Fock space framework for nonlinear system and signal analysis. 85f:93035a

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Fuller, William Roger Planar coherent states. 85d:81079

Gerasimenko, T. S. Estimation of the accuracy of approximation of an integral in a Hilbert space by multiple integrals. (Russian) 85f:41014

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Howe, Roger A symbolic calculus for nilpotent groups. 85k:22019

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Oseledets, V. I. Completely positive linear mappings, non-Hamiltonian evolution and quantum stochastic processes. (Russian) 85g:82028

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#### 46P05 Functional analysis over fields other than $\mathbb{R}$ or $\mathbb{C}$ ; non-Archimedean functional analysis [See also 12J25, 32E27.]

- Bayod, José M. (with Martínez Maurica, Javier) Bases in valued spaces. (Spanish. English summary) 85j:46135
- Beckenstein, Edward (with Narici, Lawrence; Warner, Seth) Three-space problems in commutative algebras. 85h:46102
- De Grande-De Kimpe, Nicole Non-Archimedean nuclearity. 85j:46136
- Dominguez Gómez, Jesús M. ★ Álgebras de funciones continuas y sus espacios de ideales maximales. (Spanish) [Algebras of continuous functions and their maximal ideal spaces] 85g:46089
- Garg, S. K. See Narang, T. D., 85b:46082
- Govaerts, Willy Locally convex spaces of non-Archimedean valued continuous functions. 85b:46103
- Kataaras, A. K. Strict topologies in non-Archimedean function spaces. 85f:46137  
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- Neubrunn, T. (with Riečan, B.; Riečanová, Z.) An elementary approach to some applications of nonstandard analysis. 85j:46138
- Riečan, B. See Neubrunn, T.; et al., 85j:46138
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- Henson, C. Ward (with Moore, L. C., Jr.) Nonstandard analysis and the theory of Banach spaces. 85f:46033
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### 47-XX OPERATOR THEORY

#### 47-01 Elementary exposition; textbooks

- Buchwalter, Henri (with Tarral, D.) Théorie spectrale. [Spectral theory] 85c:47001
- Tarral, D. See Buchwalter, Henri, 85c:47001

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- Brésis, H. ★ Analyse fonctionnelle. (French) [Functional analysis] 85a:46001
- Cryer, Colin W. ★ Numerical functional analysis. 85g:46001
- Kadison, Richard V. (with Ringrose, John R.) ★ Fundamentals of the theory of operator algebras. Vol. I. 85j:46099
- Kutateladze, S. S. ★ Основы функционального анализа. (Russian) [Foundations of functional analysis] 85b:46001
- Marek, Ivo (with Žitný, Karel) ★ Matrix analysis for applied sciences. Vol. 1. 85i:46001
- Nikol'skii, S. M. ★ Курс математического анализа. Том II. [Course in mathematical analysis. Vol. II] 85f:0001b
- Pansone, R. ★ Lecciones preliminares de análisis funcional. (Spanish) [Introductory lessons in functional analysis] 85a:46002
- Reed, Michael C. (with Simon, Barry) ★ Methods of modern mathematical physics. I. 85c:46002
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#### 47-02 Advanced exposition (research surveys, monographs, etc.)

- Apostol, Constantin (with Fialkow, L. A.; Herrero, Domingo A.; Voiculescu, Dan) ★ Approximation of Hilbert space operators. Vol. II. 85m:47002
- Fialkow, L. A. See Apostol, Constantin, et al., 85m:47002
- Herrero, Domingo A. ★ Approximation of Hilbert space operators. Vol. I. 85m:47001  
See also Apostol, Constantin, et al., 85m:47002
- Kantorovitch, Shmuel ★ Spectral theory of Banach space operators. 85g:47001
- Voiculescu, Dan See Apostol, Constantin, et al., 85m:47002
- Abstracts:

Conference on operator theory ★ Report of the eighth conference on operator theory. 85k:47001

##### Conference:

- Operator theory ★ Report of the eighth conference on operator theory. 85k:47001
- Herculane ★ Report of the eighth conference on operator theory. 85k:47001
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47-03 Historical (must also be assigned at least one classification number from Section 01)

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(Albers, Donald J.) See Halmos, Paul R., 85h:01032b

Berezanskii, Yu. M. (with Gorbachuk, M. L.) Selfadjoint operators. (Russian) (See 85g:01004)

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47-04 Explicit machine computation and programs (not the theory of computation or programming)

47-06 Proceedings, conferences, etc.

(Dym, Harry) See Topics in operator theory systems and networks, 85f:47001

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(Ponomarev, V. D.) See School: Theory of operators in function spaces, 85j:47001a and 85j:47001b

(Seménov, E. M.) See Theory of operators in function spaces, 85d:47001

(Shtraus, A. V.) See Functional analysis, 85g:47003 and 85g:47004

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(Bierstedt, Klaus-Dieter) See Functional analysis: surveys and recent results, 85f:46002

(Everitt, W. N.) See Ordinary differential equations and operators, 85e:34002

(Fuchssteiner, Benno) See Functional analysis: surveys and recent results, 85f:46002

(Jefferies, Brian) See Conference: Operator theory and partial differential equations, 85g:00024

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## 47Axx Single linear operators: general theory

47A05 General (adjoints, conjugates, products, inverses, domains, ranges, etc.)

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- Arora, S. C. (with Kumar, Ramesh) Joint essential numerical range. (Serbo-Croatian summary) 85f:47006
- Halo, Shing Yen On numerical ranges of generalized derivations and related properties. 85e:47001
- Knowles, Gareth J. Numerical ranges and reduction theory. 85h:47005
- Kumar, Ramesh See Arora, S. C., 85f:47006

## secondary classifications (47A12)

- Au-Yeung, Yik Hoi (with Tsing, Nam Kiu) An extension of the Hausdorff-Toeplitz theorem on the numerical range. 85f:15021
- Bhatt, Subhash J. On spectra and numerical ranges in locally  $m$ -convex algebras. 85g:46057
- Narcowich, F. J. (with Ward, J. D.) Toeplitz-Hausdorff systems. 85i:15043
- Tsing, Nam Kiu See Au-Yeung, Yik Hoi, 85f:15021
- Ward, J. D. See Narcowich, F. J., 85i:15043

## 47A15 Invariant subspaces

- Atsmon, Aharon On the existence of hyperinvariant subspaces. 85k:47005
- Barría, José (with Davidson, Kenneth R.) Unicellular operators. 85k:47006
- Beauzamy, B. Fonctions d'une contraction de classe  $C_1$ . [Functions of a contraction of class  $C_1$ ] 85a:47006  
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- de Branges, Louis The invariant subspace problem. 85b:47004
- Davidson, Kenneth R. See Barría, José, 85k:47006
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- Foias, C. (with Percy, C.) (BCP)-operators and enrichment of invariant subspace lattices. 85d:47005
- Froelich, John Compact operators in the algebra of a partially ordered measure space. 85i:47005
- Hadwin, Don Algebraically reflexive linear transformations. 85e:47003  
(with Longstaff, W. E.; Rosenthal, Peter) Small transitive lattices. 85e:47002
- Hou, Jin Chuan Strong density of algebras having a family of minimal invariant operator ranges. (Chinese) (Not in MR)
- Kaibkhanov, K. É. The set of unbounded transitive operators is strongly dense. (Russian. English and Azerbaijani summaries) 85m:47004
- Kawamura, Shinzō A decomposition of reducing subspace for shift operators. 85c:47004  
(with Tomimori, Naoko) Some families of shift operators and invariant subspaces. 85k:47007
- Kittaneh, Fuad On nearly  $\theta$ -operators. 85c:47005
- Longstaff, W. E. Nonreflexive double triangles. 85c:47006  
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- Ma, Ji Pu A pseudoshift operator and invariant subspace. (Chinese) 85k:47008
- Nikol'skiĭ, N. K. (with Vasyunin, V. I.) Control subspaces of minimal dimension, unitary and model operators. 85i:47005
- Pearcy, C. See Foias, C., 85d:47005
- Radjavi, Heydar On minimal invariant manifolds and density of operator algebras. 85k:47009
- Ran, A. C. M. (with Rodman, L.) Stability of neutral invariant subspaces in indefinite inner products and stable symmetric factorizations. 85a:47007
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- Rosenthal, Peter A perturbation of Lomonosov's theorem. (See 85c:46001)
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- Wang, Sheng Wang (with Erdélyi, I.) Analytically invariant spectral resolvents of closed operators. 85i:47007

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- Beauzamy, B. Propriétés spectrales d'un opérateur de multiplication sur  $H^2(T)$ . (English summary) [Spectral properties of a multiplication operator on  $H^2(T)$ ] 85b:47034
- Domar, Yngve Extensions of the Titchmarsh convolution theorem with applications in the theory of invariant subspaces. 85b:46062
- Esterle, J. Quasimultipliers, representations of  $H^\infty$ , and the closed ideal problem for commutative Banach algebras. 85g:46067
- Gilfeather, F. Derivations on certain CSL algebras. 85f:47047
- Grabner, Sandy Compact endomorphisms and closed ideals in Banach algebras. 85j:46079
- Gupta, D. K. (with Komal, B. S.) Characterisations and invariant subspaces of composition operators. 85k:47048
- Herrero, Domingo A. Eigenvectors and cyclic vectors of bilateral weighted shifts. II. Simply invariant subspaces. 85j:47031
- Hill, L. Thomas Invariant subspaces of direct sums of finite convolution operators. 85a:47029
- Hopenwasser, Alan (with Laurie, Cecelia; Moore, Robert Laurens) Reflexive algebras with completely distributive subspace lattices. 85m:47047
- Hou, Jin Chuan On strong density of algebras with a class of minimal invariant operator ranges. 85j:47050
- Karpemko, I. I. Characteristic operator-functions of  $K_1$ -operators. (Russian. English summary) 85e:47010
- Kissin, E. V. On some reflexive algebras of operators and the operator Lie algebras of their derivations. 85m:47048
- Komal, B. S. See Gupta, D. K., 85k:47048
- Lau, Anthony To Ming Finite-dimensional invariant subspaces for a semigroup of linear operators. 85b:43002
- Laurie, Cecelia (with Longstaff, W. E.) A note on rank-one operators in reflexive algebras. 85b:47052
- See also Hopenwasser, Alan; et al., 85m:47047
- Longstaff, W. E. See Laurie, Cecelia, 85b:47052
- Mehta, R. D. (with Ramanujan, P. B.; Vasavada, M. H.) Reducing subspaces for representations of function algebras. 85c:46053
- Merslyakov, S. G. Invariant subspaces of a multiple differentiation operator. (Russian) 85j:47035
- Moore, Robert Laurens See Hopenwasser, Alan; et al., 85m:47047
- Nordgren, Eric A. The lattice of operator ranges of a von Neumann algebra. 85e:46037 (with Rosenthal, Peter; Wintrobe, F. S.) Composition operators and the invariant subspace problem. (Not in MR)
- Ramanujan, P. B. See Mehta, R. D.; et al., 85c:46053
- Rosenthal, Peter See Nordgren, Eric A.; et al., (Not in MR)
- Sadikov, N. M. Invariant subspaces in the Hardy space on a polydisk that are generated by inner functions. (Russian. English and Azerbaijani summaries) 85a:47032
- Solel, Baruch The multiplicity functions of invariant subspaces for nonselfadjoint crossed products. 85i:46095
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- Vasavada, M. H. See Mehta, R. D.; et al., 85c:46053
- Wintrobe, F. S. See Nordgren, Eric A.; et al., (Not in MR)

## 47A20 Dilations, extensions, compressions

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- Arsene, Gr. (with Ceausescu, Zoia) Contractive intertwining dilations and norm approximation techniques. 85a:47008
- Ceausescu, Zoia See Arsene, Gr., 85a:47008
- Choi, M. D. (with Davis, Chandler) Dilations to systems of matrix units. 85e:47004
- Davis, Chandler See Choi, M. D., 85e:47004
- Foias, C. (with Frazho, Arthur E.) Redheffer products and the lifting of contractions on Hilbert space. 85i:47009
- Frazho, Arthur E. See Foias, C., 85i:47009
- Kallinina, T. B. An extension of an operator in Hilbert space with an anti-unitary transformation. (Russian) 85i:47010
- Kushel', A. V. Selfadjoint and  $\beta$ -selfadjoint dilations of linear operators. (Russian) 85g:47009
- Li, Rong Lu Representations and extensions of bounded linear operators. (Chinese) (Not in MR)
- Mlak, W. A note on general dilation theorems. 85d:47007
- Olteanu, Octav Théorèmes de prolongement d'opérateurs linéaires. [Extension theorems for linear operators] 85f:47007
- Sebestyén, Zoltán Moment problem for dilatable semigroups of operators. 85d:47009
- Moment type theorems for  $\tau$ -semigroups of operators on Hilbert space. I. 85d:47008
- Straus, A. V. On the theory of extremal extensions of a bounded positive operator. (Russian) 85b:47006
- Shul'man, V. S. Linear equations with normal coefficients. (Russian) 85e:47005
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- Kudryashov, Yu. L. Symmetric and selfadjoint dilations of dissipative operators. (Russian) 85c:47032

- Makarova, A. D. Extensions and generalised resolvents of an operator that commutes with an involution. (Russian) 85k:47006
- (Mlak, W.) See Stochel, J., 85e:47061
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- Stochel, J. (with Szymański, W.) On the uniqueness of minimal  $R$ -dilations for unstarred semigroups. 85e:47061
- Szafraniec, P. H. Boundedness in dilation theory. (See 85c:46001)
- Dilations of linear and nonlinear operator maps. (See 85h:00009)
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- Murtazin, Kh. Kh. Spectral projectors of a class of nonselfadjoint operators. (Russian) 85f:47008

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- Seddighi, Karim von Neumann operators in  $B_1(\Omega)$ . 85i:47019
- Weak-star closed algebras and generalised Bergman kernels. 85i:47033

## 47A30 Norms (inequalities, more than one norm, etc.)

- Borwein, David Generalized Hausdorff matrices as bounded operators on  $\ell^p$ . 85b:47005
- Davis, Chandler Dilations preserving a bound on the norm of an operator. 85h:47007
- Drury, S. W. Remarks on von Neumann's inequality. 85b:47006
- Erner, P. Generalized Bargmann inequalities. 85f:47009
- Fedorovskaya, Yu. B. An estimate of the norm  $\|f(A_1, A_2) - f(B_1, B_2)\|$  for pairs of selfadjoint commuting operators. (Russian. English summary) 85d:47010
- Kato, Mikio Generalized Clarkson's inequalities and the norms of the Littlewood matrices. 85i:47011
- Kaufman, William E. A stronger metric for closed operators in Hilbert space. 85a:47010
- Moore, Robert Laurens (with Weiss, Gary) The metric Fuglede property and normality. 85d:47011
- Partington, J. R. Norm attaining operators. 85a:47012
- Plák, Vlastimil A maximum problem for operators. (Russian and Czech summaries) 85k:47010
- Teodorescu, Radu I. On a problem of A. Shields. (Romanian. French summary) 85c:47007
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- Ong, Sing Cheong On the Schur multiplier norm of matrices. 85i:15044
- Queiro, João Filipe A norm for matrices over a principal ideal ring and some applications. (Portuguese. English summary) 85j:16023
- Synnatschke, J. Über eine additive Normgleichheit für Operatoren in Banachverbänden. [On an additive norm equality for operators in Banach lattices] 85k:46017
- Zenger, C. Dual operator norms and the spectra of matrices. 85g:15030

## 47A35 Ergodic theory [See also 28Dxx.]

- Akçoglu, M. A. Differentiation of superadditive processes. 85g:47010
- Atala, Robert E. On uniform ergodic theorems for Markov operators on  $C(X)$ . 85k:47011
- Brunel, Antoine (with Émilion, Richard) Sur les opérateurs positifs à moyennes bornées. (English summary) [On positive mean-bounded operators] 85f:47010
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- Gaposhkin, V. P. Ergodic theorem for functions of normal operators. (Russian) 85k:47013
- A Tauberian ergodic theorem for normal contracting operators. (Russian) 85j:47005
- Helinich, Henri Convergence des moyennes d'un opérateur positif. (English summary) [Convergence of the means of some positive operator] 85e:47006
- Hsiao, Sheng Yem Ergodic theorems for semigroups of operators on a Grothendieck space. 85g:47011
- Iwanik, Anselm Unique ergodicity of irreducible Markov operators on  $C(X)$ . 85k:47014
- Kan, Charn Huen Ergodic properties of Lamperti operators. II. 85g:47012
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- (with Fedorov, A. L.) A statistical ergodic theorem in nonseparable Orlicz spaces. (Russian) 85k:47018
- Yoshimoto, T. A note on the ergodic theorem. 85f:47011

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- Arendt, W. Spectral properties of Lamperti operators. 85d:47040  
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- Arov, D. Z. (with Grossman, L. Z.) Scattering matrices in the theory of extensions of isometric operators. (Russian) 85c:47006  
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 Demuth, Michael On resonances in mathematical scattering theory. (See 85c:46001)  
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- Baumgärtel, Hellmut Transformation and intertwining properties of wave operators in quantum field theory. 85d:81081  
 (with Wollenberg, Manfred) An inverse scattering approach to constructive quantum field theory. (See 85g:00027)  
 Ben-Artzi, Matania Unitary equivalence and scattering theory for Stark-like Hamiltonians. 85e:81113  
 Brüning, E. (with Gesztesy, F.) Continuity of wave and scattering operators with respect to interactions. 85g:81179  
 Carroll, Robert Wayne (with Santosa, Fadil) Spectral measures and autocorrelation via transmutation. 85e:86005  
 Demuth, Michael (with Wollenberg, Manfred) Necessary conditions for the existence of wave operators. 85f:35162  
 Enns, Volker Completeness of three-body quantum scattering. 85h:81071  
 Propagation properties of quantum scattering states. 85h:81167  
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 Guseinov, G. Sh. (with Mukhtarov, F. Sh.) The scattering problem for an infinite nonselfadjoint Jacobi matrix. (Russian. English and Azerbaijani summaries) 85h:47032  
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#### 47A45 Canonical models for contractions and nonselfadjoint operators

- Alexander, V. T. Contraction operators quasimimilar to a unilateral shift. 85e:47009  
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- Shor, O. L. Equivalent unitary colligations. (Russian) 85b:47008  
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 Takahashi, Katsutoshi (with Uchiyama, Mitsuru) Every  $C_{00}$  contraction with Hilbert-Schmidt defect operator is of class  $C_0$ . 85g:47014  
 Uchiyama, Mitsuru Contractions and unilateral shifts. 85e:47011  
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- Arsene, Gr. (with Ceauşescu, Zoia) Contractive intertwining dilations and norm approximation techniques. 85a:47008  
 Barria, José (with Davidson, Kenneth R.) Unicellular operators. 85k:47006  
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#### 47A50 Equations involving linear operators, with vector unknowns

- Abian, Alexander Row orthonormal infinite square matrices. 85e:47013  
 Ageev, A. L. A regular algorithm for determining a basis of the kernel of a linear operator. (Russian) 85b:47009  
 Agoshkov, V. I. Generalized formulation of the method of integral identities. (Russian) 85a:47015  
 Basitov, Yu. A. Minimax solution of an equation of the first kind. (Russian) 85e:47014  
 Brinckmann, Joachim Regularisierung eines Systems von Operatorgleichungen für die Anwendung von Variationsmethoden. (English, French and Russian summaries) [Regularisation of a system of operator equations for the application of variational methods] (Not in MR)  
 Chashchin, O. N. Regularization of Volterra operator equations of the second kind in a scale of Banach spaces. (Russian) 85h:47011  
 Denisov, A. M. A method of solution of equations of the first kind in a Hilbert space. (Russian) 85d:47012  
 Domanskii, E. N. Properties of total sequences of operators and some of their applications. (Russian) 85e:47015  
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 Favini, Angelo A note on singular and degenerate abstract equations. (Italian summary) 85e:47016  
 Greenberg, William (with van der Mee, C. V. M.) Problems in the abstract theory of stationary one-dimensional transport. 85j:47007  
 Imomnazarov, B. On the question of regularization of operator equations of the first kind. (Russian. Tajiki summary) 85d:47013  
 Lee, Sung J. Nonhomogeneous boundary value problems for linear manifolds. II. Ordinary differential subspaces in  $L_p$ -spaces. 85j:47008b  
 Nonhomogeneous boundary value problems for linear manifolds. 85j:47008a  
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 Schott, Dieter About asymptotic convergence of linear continuous operators in Banach spaces. 85k:47023  
 Sofronov, I. L. Nondegeneracy of equations peculiar to the method of difference projectors. (Russian) 85h:47013  
 Suhadolc, Anton ★ Nekorektni problemi. (Slovenian) [Ill-posed problems] 85b:47011  
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 Tasche, Manfred Algebraische Operatorrechnung für einen rechtsinvertierbaren Operator. (English, French and Russian summaries) [Algebraic operator calculus for a right-invertible operator] (Not in MR)  
 Vinokurov, V. A. (with Domanskii, E. N.; Menikhes, L. D.; Plichko, A. N.) Some problems of linear regularizability. (Russian) 85g:47016



- Zhupanov, E. A two-parameter system of operator equations with involution operators. (Russian) **85f:47013**  
 Zifko, Jan Convergence of extrapolation coefficients. (Russian and Czech summaries) **85m:47005**

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- Abian, Alexander Some properties of row orthonormal infinite square matrices and solvability of infinite systems of infinite linear equations. **85g:15006**  
 Ahner, John F. Limiting behavior of solutions to integral equations when the resolvent kernel has a pole of order greater than unity. **85i:47023**  
 Arosio, Alberto Linear second order differential equations in Hilbert spaces. The Cauchy problem and asymptotic behaviour for large time. **85i:34033**  
 Asanov, A. A class of Volterra operator equations. (Russian) **85h:47048**  
 Brodovskii, V. G. A boundary value problem for linear functional-differential equations. (Russian. Kazakh summary) **85m:34110**  
 Cryer, Colin W. ★ Numerical functional analysis. **85g:40001**  
 Danilin, A. R. (with Tanana, V. P.) Necessary and sufficient conditions for convergence of approximations of linear ill-posed problems in a Hilbert space. (Russian) **85h:65121**  
 Dzhumayev, S. (with Nazimov, A.) A method of approximate calculation of quasisolutions. (Russian. Tajiki summary) **85d:65035**  
 Engl, H. W. On the convergence of regularization methods for ill-posed linear operator equations. **85e:65026**  
 Fedotov, A. M. ★ Линейные некорректные задачи со случайными ошибками в данных. (Russian) [Linear ill-posed problems with random errors in the data] **85e:65069**  
 Fonariv, A. A. Solution of a bifurcation equation with a simple eigenvalue. (Russian) **85f:65058**  
 Francis, Bruce A. (with Helton, J. William; Zames, G.)  $H^\infty$ -optimal feedback controllers for linear multivariable systems. **85j:93023**  
 Gaphina, G. N. A projection method for solving equations of convolution type by means of piecewise polynomial approximation. (Russian) **85m:65131**  
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 Sandefur, James T., Jr. Convergence of solutions of a second-order Cauchy problem. **85e:34069**  
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 Sidorov, N. A. Differential equations with a Volterra operator multiplying the derivative. (Russian) **85i:34131**  
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#### 47A53 Fredholm operators

- Belonozov, V. S. Instability indices of unbounded operators. (Russian) **85k:47024**  
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 Sunder, V. S. A spectrum modulo operators of rank less than  $n$ . **85a:47018**

- Tacon, D. G. Generalized Fredholm transformations. **85j:47009**

- Verma, R. U. Formulae of Fredholm type for singular integral operators with nonvanishing indices. **85i:47014**

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- Barnes, Bruce A. Inverse closed subalgebras and Fredholm theory. **85c:46043**  
 Bunyatov, M. R. (with Dzhabrailova, R. P.) Koszul homology theory and Fredholm families. (Russian. English and Azerbaijani summaries) **85f:46133**  
 Dzhabrailova, R. P. See Bunyatov, M. R. **85f:46133**  
 Gęba, Kazimierz (with Granas, A.) A proof of the Borsuk antipodal theorem for Fredholm maps. **85i:58027a**  
 (with Granas, A.) A proof of the Borsuk antipodal theorem. **85i:58027b**  
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 Mennicken, Reinhard Eigenvalue problems depending nonlinearly on the parameter. **85b:47021**  
 Miyajima, Shisuo Some converses of a theorem of M. Schechter on the conjugate of a product of operators. **85g:47006**  
 Nikaido, Gyokai Semi-Fredholm pair of closed subspaces and product of closed operators. **85k:47003**  
 Olsen, Catherine L. Index theory in von Neumann algebras. **85k:46064**  
 Rakhimov, D. G. (with Rusak, Yu. B.) Some special cases of the use of the method of false perturbations. (Russian) **85d:47021**  
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 Zemánek, Jaroslav On the  $\Delta$ -characteristic of M. Schechter. (See **85g:60027**)

#### 47A55 Perturbation theory

- Basakov, A. G. Methods of abstract harmonic analysis in the theory of perturbations of linear operators. (Russian) **85j:47010**  
 Bruk, V. M. (with Krivonogov, N. P.) Convergence of sectorial forms. (Russian) **85i:47015**  
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 Dyachkovskii, S. V. Operator analogues of a second remarkable limit. (Russian. English summary) **85k:47025**  
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 Hempel, Rainer Perturbations by quadratic forms and invariance of essential spectra. **85d:47015**  
 Hughes, Rhonda J. Some consequences of Duhamel's formula for weak solutions of time-dependent Schrödinger equations. **85i:47016**  
 Hunsicker, W. (with Pillet, C. A.) Degenerate asymptotic perturbation theory. **85d:47016**  
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 Labeev, V. I. Estimation of norms of perturbations in sequentially compact approximation. (Russian) **85j:47011**  
 Lee, Sung J. Dense linear manifolds and application to linear differential operators. **85d:47017**  
 Livchak, A. Ya. Stability of certain properties of a linear operator in topological vector spaces. (Russian. English summary) **85b:47012**  
 Loginov, B. V. (with Rakhimov, D. G.) The method of false perturbations. (Russian) (See **85c:46001**)  
 Lyantse, V. E. (with Storozh, O. G.) Some perturbation of linear operators with variation in their domain of definition. (Russian) **85g:47017**  
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 Skrynnikov, A. V. The Friedrichs method and Krylov-Bogolyubov substitution in the theory of similarity of linear operators. (Russian) **85g:47018**  
 Quasinilpotent variant of the Friedrichs method in the theory of similarity of linear operators. (Russian) **85f:47014**  
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 Tidjane Diallo, A. On the convergence of the monotone sequences of operator-valued functions. **85f:47015**  
 Wrobel, Volker Strikt singuläre Operatoren in lokalconvexen Räumen. II. Beschränkte Operatoren. [Strictly singular operators in locally convex spaces. II. Bounded operators] **85k:47026**

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- Apostol, Constantin (with Fialkow, L. A.; Herrero, Domingo A.; Voiculescu, Dan) ★ Approximation of Hilbert space operators. Vol. II. 85m:47002
- Arveson, William Perturbation theory for groups and lattices. 85d:47043
- Bhatia, Rajendra (with Davis, Chandler; McIntosh, Alan G. R.) Perturbation of spectral subspaces and solution of linear operator equations. 85a:47030 (with Davis, Chandler) A bound for the spectral variation of a unitary operator. 85b:15020
- Davis, E. B. Double well Hamiltonians. 85i:47039
- Davis, Chandler See Bhatia, Rajendra; et al., 85a:47030 and 85b:15020
- Dahangir'yan, S. G. (with Laksav, S. N.) Perturbation theory for eigenvalues and resonances of the Friedrichs operator. (Russian) 85g:45004
- Fialkow, L. A. See Apostol, Constantin; et al., 85m:47002
- Harte, Robin Almost open mappings between normed spaces. 85b:47024
- Herrero, Domingo A. ★ Approximation of Hilbert space operators. Vol. I. 85m:47001
- Compact perturbations of nest algebras, index obstructions, and a problem of Arveson. 85j:47049
- See also Bhatia, Rajendra; et al., 85m:47002
- Jonas, P. (with Langer, Heinz) Some questions in the perturbation theory of  $J$ -nonnegative operators in Krein spaces. 85j:47045
- Laksav, S. N. See Dahangir'yan, S. G., 85g:45004
- Langer, Heinz See Jonas, P., 85j:47045
- Lewis, John Trevor (with Schreiber, Morris) On a theorem of Weyl. 85h:47022
- Li, Shao Kuan On sequences of compact operators and measures of noncompactness. (Chinese) 85i:47040
- Litvinov, G. L. Approximation properties of locally convex spaces and the problem of single-valuedness of the trace of a linear operator. (Russian) 85g:47028
- Markus, A. S. (with Matushev, V. I.) Comparison theorems for spectra of linear operators and spectral asymptotics. (Russian) 85b:47003
- Matushev, V. I. See Markus, A. S., 85b:47003
- McIntosh, Alan G. R. Square roots of operators and applications to hyperbolic PDEs. 85b:47018
- See also Bhatia, Rajendra; et al., 85a:47030
- Najman, B. Correction to the paper: "Perturbation theory for selfadjoint operators in Pontrjagin spaces. I" [Glas. Mat. Ser. III 15(35) (1980), no. 2, 351-371; MR 82c:47048]. 85g:47051
- Schmid, Johannes The maximum modulus eigenvalues of certain nonnegative matrices under perturbation. 85b:15013
- Schreiber, Morris See Lewis, John Trevor, 85h:47022
- Smyth, M. R. F. Fredholm theory in Banach algebras. 85i:46063
- Stampfli, Joseph G. An  $\ell^p$  and  $\ell^\infty$  version of Tacon's theorem. 85b:47026
- Voiculescu, Dan See Apostol, Constantin; et al., 85m:47002
- Wu, Jing Bo Quasipositive definiteness of operator-valued functions and normal symmetric systems. (Chinese) 85k:47078

## 47A56 Functions whose values are linear operators (operator and matrix pencils, etc.)

- Allakhverdiev, Dah. E. (with Dzhaharzada, R. M.) Completeness of the system of eigenelements of a multiparameter system of operators. (Russian. English and Azerbaijani summaries) 85d:47019
- (Ando, Tsuyoshi) See Kovalishina, I. V., 85e:47019
- Capri, Osvaldo N. (with González Domínguez, Alberto) On operator-valued analytic functions with positive real part whose logarithm belongs to a  $C_p$  class. 85g:47019
- Cohen, Nir On minimal factorizations of rational matrix functions. 85e:47018
- Dzhaharzada, R. M. See Allakhverdiev, Dah. E., 85d:47019
- Gohberg, Israel (with Rodman, L.) Analytic operator valued functions with prescribed local data. 85g:47020
- González Domínguez, Alberto See Capri, Osvaldo N., 85g:47019
- Guseinov, M. M. See Maksudov, F. G., 85e:47020
- Heinig, G. Generalized resultant operators and classification of linear operator pencils up to strong equivalence. 85m:47006
- Kostryuchenko, A. G. (with Shkhalikov, A. A.) Selfadjoint quadratic operator pencils and elliptic problems. (Russian) 85c:47015
- (with Shkhalikov, A. A.) On the theory of selfadjoint quadratic operator pencils. (Russian) 85i:47017
- Kovalishina, I. V. (with Potapov, V. P.) ★ Integral representation of Hermitian positive functions. 85e:47019
- Lerer, L. (with Rodman, L.; Tismenetsky, M.) Bezoutian and Schur-Cohn problem for operator polynomials. 85k:47027
- Levanderakili, S. Z. Spectral asymptotics of nonlinear pencils and operators with nonempty essential spectrum. (Russian) 85d:47020
- Maksudov, F. G. (with Guseinov, M. M.) A polynomial pencil in the presence of a continuous spectrum in a Banach space. (Russian. English and Azerbaijani summaries) 85e:47020
- Mamedov, K. S. Distribution of the spectrum of a polynomial operator-differential pencil and application. (Russian. English and Azerbaijani summaries) 85e:47021
- Markus, A. S. (with Matushev, V. I.) A comparison theorem on spectra and spectral asymptotic behavior for M. V. Keldysh's pencil. (Russian) 85j:47013
- Matushev, V. I. See Markus, A. S., 85j:47013
- Mirzoev, S. S. Multiple completeness of the root vectors of polynomial operator pencils. (Russian) (See 85c:46001)
- Müller, Rolf Computations of holomorphic multiparameter eigenvalue problems. 85k:47028
- Potapov, V. P. See Kovalishina, I. V., 85e:47019
- Rakhimov, D. G. (with Rusak, Yu. B.) Some special cases of the use of the method of false perturbations. (Russian) 85d:47021
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- Rusak, Yu. B. See Rakhimov, D. G., 85d:47021

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- Aggour, M. M. See Ghaleb, F. F., 85m:47033
- Burbea, Jacob (with Masani, P.) ★ Banach and Hilbert spaces of vector-valued functions. 85d:46050
- Clancey, K. F. (with Kon, B. A.) The Bezoutian and the algebraic Riccati equation. 85g:47038
- Cohen, Nir Spectral analysis of regular matrix polynomials. 85f:15011
- Fuiga, V. I. Decrease in the length of gaps in the spectrum of polynomial pencils. (Russian) 85k:47003
- Filinkov, A. I. See Melnikova, I. V., 85j:34129
- Gerdzhikov, V. S. (with Ivanov, M. I.) A quadratic pencil of general type and nonlinear evolution equations. I. Expansions in "squares" of solutions—generalized Fourier transforms. (Russian. English summary) 85h:35192
- (with Ivanov, M. I.) A quadratic pencil of general type and nonlinear evolution equations. II. Hierarchies of Hamiltonian structures. (Russian. English summary) 85h:35193
- Ghaleb, F. F. (with Aggour, M. M.) Decomposability of operator-valued functions. (Serbo-Croatian summary) 85m:47033
- Ivanov, M. I. See Gerdzhikov, V. S., 85h:35192 and 85h:35193
- Karma, O. Approximation in the eigenvalue problem with holomorphic dependence of the operator on the parameter. II. (Russian. English summary) 85h:47014
- Kon, B. A. See Clancey, K. F., 85g:47038
- Kopilevich, Yu. I. See Zil'bergelt, A. S., 85i:78025
- Markus, A. S. (with Matushev, V. I.) Comparison theorems for spectra of linear operators and spectral asymptotics. (Russian) 85b:47002
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- Matushev, V. I. See Markus, A. S., 85b:47002
- Melnikova, I. V. (with Filinkov, A. I.) Classification and well-posedness of the Cauchy problem for second-order equations in Banach space. (Russian) 85j:34129
- Mennicken, Reinhard Eigenvalue problems depending nonlinearly on the parameter. 85b:47021
- Pistach, Albrecht Ideals of multilinear functionals (designs of a theory). (See 85g:00037)
- Radešev'kii, G. V. A way of proving the minimality and basis property of eigenvectors. (Russian) 85b:47022
- Shestopalov, Yu. V. The discrete spectrum of natural waves of a screened open slit line. (Russian) 85b:78028
- Taragan, D. I. Some criteria for existence of a divisor of a holomorphic operator-function. (Russian) 85k:47036
- Zil'bergelt, A. S. (with Kopilevich, Yu. I.) ★ Спектральная теория регулярных волноводов. (Russian) [The spectral theory of regular waveguides] 85i:78025

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- Albrecht, E. Several variable spectral theory in the noncommutative case. 85h:47015
- Anderson, W. N., Jr. (with Morley, T. D.; Trapp, G. E.) Symmetric function means of positive operators. 85j:47015
- Ando, Tsuyoshi An inequality between symmetric function means of positive operators. 85b:47014
- Carrillo, Angel (with Hernández, Carlos) Spectra of constructs of a system of operators. 85f:47016
- Chen, Gong Ning A note on Vitali's convergence theorem. (Chinese. English summary) 85k:47029
- Doek, Nadia Calculs fonctionnels pour l'adjoint d'un opérateur de classe  $C_{10}$ . (English summary) [Functional calculus for the adjoint of a  $C_{10}$  operator] 85f:47017
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- Hou, Xue Zhang Local spectral mapping theorem for closed operators. (Chinese. English summary) 85j:47016
- Klotz, Lutz Peter Über schwach meßbare positiv definite Operatorfunktionen. (English summary) [On weakly measurable, positive definite operator functions] 85i:47018
- Levi, R. N. Notes on the Taylor joint spectrum of commuting operators. 85g:47021
- McIntosh, Alan G. R. Square roots of operators and applications to hyperbolic PDEs. 85b:47018
- Miller, John Boris The Euler-Maclaurin formula generated by a summation operator. 85f:47018
- Morley, T. D. See Anderson, W. N., Jr.; et al., 85j:47015
- Radyno, Ya. V. Vectors of exponential type and the functional calculus. (Russian. English summary) 85a:47019
- Seddighi, Karim von Neumann operators in  $B_1(\Pi)$ . 85i:47019
- Shih, Mou Hsiang (with Tan, Kok Keong) Analytic functions of topological proper contractions. 85k:47030
- Tan, Kok Keong See Shih, Mou Hsiang, 85k:47030
- Trapp, G. E. See Anderson, W. N., Jr.; et al., 85j:47015
- Trent, Tavan T. Meromorphic functions of operators. 85k:47031
- Vasilescu, F.-H. ★ Analytic functional calculus and spectral decompositions. 85b:47016
- Wang, Sheng Wang The spectral mapping theorem for  $D_{(M_k)}$  operators. (Chinese. English summary) 85m:47009
- Young, Nicholas J. Orbits of the unit sphere of  $L(N, K)$  under symplectic transformations. 85k:47032

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Dudlak, James Spectral mapping theorems for subnormal operators. 85j:47024

- Gentry, Roosevelt Operators from Banach spaces to complex interpolation spaces. 85f:46135
- Hwang, Jun Shung A problem on the Riesz-Dunford operator calculus and convex univalent functions. 85b:30018
- Kalb, Klaus Gero Sobolev- und Sobolev-Hardy-Räume auf  $S^1$ : Dualitätstheorie und Funktionalalküle. [Sobolev and Sobolev-Hardy spaces on  $S^1$ : duality theory and functional calculi] 85m:46033
- Khelfeta, A. Ya. (with Yuditakii, P. M.) Interpolation of an operator that commutes with truncated shift, by functions of Schur's class. I. (Russian) 85i:47030
- Rudol, K. On spectral mapping theorems. 85c:46045
- Waelbroeck, L. The holomorphic functional calculus as an operational calculus. 85g:46061
- Yuditakii, P. M. See Khelfeta, A. Ya., 85i:47030

#### 47A62 Equations involving linear operators, with operator unknowns

- Bhatia, Rajendra (with Davis, Chandler; McIntosh, Alan G. R.) Perturbation of spectral subspaces and solution of linear operator equations. 85a:47020
- Davis, Chandler See Bhatia, Rajendra; et al., 85a:47020
- McIntosh, Alan G. R. See Bhatia, Rajendra; et al., 85a:47020
- Nguyễn Văn Mậu Characterization of polynomials in algebraic operators with constant coefficients. 85d:47022
- Rosenthal, Peter On the equations  $X = KXS$  and  $AX = XK$ . 85g:47023
- Schwartz, Allen The operator equation  $AX - XB = C$  with normal  $A$  and  $B$ . 85a:47021
- Sun, Shun Hua On the operator equation  $U^*TU = \lambda T$ . (Chinese) (Not in MR)

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- Bercovici, H. (with Foias, C.; Pearcy, C.) Dilation theory and systems of simultaneous equations in the predual of an operator algebra. I. 85k:47089
- (with Chevreau, Bernard; Foias, C.; Pearcy, C.) Dilation theory and systems of simultaneous equations in the predual of an operator algebra. II. 85k:47090
- Chevreau, Bernard See Bercovici, H.; et al., 85k:47090
- Foias, C. See Bercovici, H.; et al., 85k:47089 and 85k:47090
- Pearcy, C. See Bercovici, H.; et al., 85k:47089 and 85k:47090

#### 47A65 Structure theory

- Arocena, Rodrigo Sur le théorème de Sarason et Nagy-Foias. [On the Sarason-Nagy-Foias theorem] 85b:47017
- Bunce, John W. Complex Jordan operators. 85b:47017
- van Casteren, Jan A. Operators similar to unitary or selfadjoint ones. 85e:47023
- Cowen, S. N. (with Douglas, R. G.) Operators possessing an open set of eigenvalues. 85k:47033
- Dinescu, Gabriela Weak spectral equivalence and weak spectral convergence. 85g:47023
- Douglas, R. G. See Cowen, M. J., 85k:47033
- Goya, Eitoku (with Saito, Teishiro) Quasi-affine transforms of dominant operators. 85k:47034
- Herrero, Domingo A. On the distance between similarity orbits. 85c:47017
- Kravitsky, Naftali Regular colligations for several commuting operators in Banach space. 85b:47018
- Li, Shao Kuan An asymptotic Putnam-Fuglede theorem. (Chinese) (Not in MR)
- Liu, Long Fu A note on reductivity of operators. 85f:47019
- Naboko, S. N. Conditions for similarity to unitary and selfadjoint operators. (Russian) 85m:47010
- Saito, Teishiro See Goya, Eitoku, 85k:47034
- Szymański, W. On the "symmetric commutant"—canonical decomposition of families of Hilbert space operators. 85g:47024
- Uchiyama, Mitsuru Contractions with  $(\sigma, c)$  defect operators. 85j:47017
- Zolotarev, V. A. Spectral analysis of nonselfadjoint commutative systems of operators, and nonlinear differential equations. (Russian) 85j:47018

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- Apostol, Constantin (with Fialkow, L. A.; Herrero, Domingo A.; Voiculescu, Dan) ★ Approximation of Hilbert space operators. Vol. II. 85m:47002
- Bercovici, H. (with Foias, C.; Pearcy, C.) Dilation theory and systems of simultaneous equations in the predual of an operator algebra. I. 85k:47089
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- Bunce, John W. Models for  $n$ -tuples of noncommuting operators. 85k:47019
- Chevreau, Bernard See Bercovici, H.; et al., 85k:47090
- Davidson, Kenneth R. Quasitriangular algebras are "maximal". 85b:47052
- Fialkow, L. A. See Apostol, Constantin; et al., 85m:47002
- Foias, C. See Bercovici, H.; et al., 85k:47089 and 85k:47090
- Grabner, Sandy The spectral diameter in Banach algebras. 85k:46057
- Herrero, Domingo A. ★ Approximation of Hilbert space operators. Vol. I. 85m:47001
- See also Apostol, Constantin; et al., 85m:47002
- Kallianpur, G. (with Mandrekar, V.) Nondeterministic random fields and Wold and Halmos decompositions for commuting isometries. 85c:60076
- Karasz, M. T. The use of convolution in the proof of unicity. (Russian. English summary) 85h:47035
- Kogut, E. A. (with Yantsevich, A. A.) Unitary equivalence of linear discrete systems and transfer functions with an operator argument. (Russian) 85h:93026
- Mandrekar, V. See Kallianpur, G., 85c:60076
- Miller, John Boris The Euler-Maclaurin sum formula for an inner derivation. 85b:46057
- Nikol'skii, N. K. (with Vasyunin, V. I.) Control subspaces of minimal dimension, unitary and model operators. 85i:47066
- Nordgren, Eric A. (with Radjavi, Heydar; Rosenthal, Peter) Triangularizing semigroups of compact operators. 85b:47047
- Pearcy, C. See Bercovici, H.; et al., 85k:47089 and 85k:47090

- Radjavi, Heydar See Nordgren, Eric A.; et al., 85b:47047
- Rho, Jae Chul On a class of weakly continuous operators. 85j:47047
- Rosenthal, Peter See Nordgren, Eric A.; et al., 85b:47047
- Sedghi, Karim Algebras generated by a contraction. 85m:47040
- Sergeichuk, V. V. Classification of linear operators in a finite-dimensional unitary space. (Russian) 85i:15019
- Torgaev, Aleksandar Finiteness of spectra of graphs obtained by some operations on infinite graphs. 85g:05106
- Vasyunin, V. I. See Nikol'skii, N. K., 85i:47066
- Voiculescu, Dan See Apostol, Constantin; et al., 85m:47002
- Wu, Pei Yuan Multiplicities of isometries. 85h:47028
- Yantsevich, A. A. See Kogut, E. A., 85h:93026

#### 47A66 (Non)quasitriangular, (non)quasidiagonal operators

- Salinas, Norberto Quasitriangular extensions of  $C^*$ -algebras and problems on joint quasitriangularity of operators. 85k:47035

##### secondary classifications (47A66)

- Herrero, Domingo A. Compact perturbations of continuous nest algebras. 85a:47047

#### 47A68 Factorization theory

- Chatterji, S. D. Factorization of positive finite operator-valued kernels. 85c:47018
- Engel'son, E. L. Decomposition of a linear operator in locally convex spaces. (Russian. English summary) 85a:47023
- Milman, Mark (with Schumitsky, Alan) On a class of operators on Hilbert space with applications to factorization and systems theory. 85e:47023
- Page, Lavon The Szegő and Beurling theorems and operator factorizations. (See 85c:46001)
- Schumitsky, Alan See Milman, Mark, 85e:47023
- Taragan, D. I. Some criteria for existence of a divisor of a holomorphic operator-function. (Russian) 85k:47036

##### secondary classifications (47A68)

- Dym, Harry (with Gohberg, Israel) Unitary interpolants, factorization indices and infinite Hankel block matrices. 85m:47021a
- (with Gohberg, Israel) Hankel integral operators and isometric interpolants on the line. 85m:47021b
- Ghousoub, N. (with Johnson, W. B.) Counterexamples to several problems on the factorization of bounded linear operators. 85j:47046
- Gohberg, Israel (with Lerer, L.; Rodman, L.) Wiener-Hopf factorization of piecewise matrix polynomials. 85d:15016
- See also Dym, Harry, 85m:47021a and 85m:47021b
- Johnson, W. B. See Ghousoub, N., 85j:47046
- Jonckheere, Edmond A. (with Silverman, L. M.) The linear-quadratic optimal control problem—the operator-theoretic viewpoint. 85i:49024
- Jones, D. S. Commutative Wiener-Hopf factorization of a matrix. 85h:15017
- Lerer, L. (with Rodman, L.; Tismenetsky, M.) Besoutian and Schur-Cohn problem for operator polynomials. 85k:47027
- See also Gohberg, Israel; et al., 85d:15016
- Rodman, L. See Gohberg, Israel; et al., 85d:15016 and Lerer, L.; et al., 85k:47027
- Silverman, L. M. See Jonckheere, Edmond A., 85i:49024
- Spitkovskii, I. M. Factorization of certain classes of semi-almost-periodic matrix-functions and its applications to systems of equations of convolution type. (Russian) 85h:45009
- Tismenetsky, M. See Lerer, L.; et al., 85k:47027

#### 47A70 Eigenfunction expansions, rigged Hilbert spaces; eigenvalue problems in general [See also 49Gxx.]

- Binding, Paul Nonuniform right definiteness. 85j:47019
- Browne, Patrick J. (with Sleeman, B. D.) Multiparameter spectral theory for symmetric relations. 85g:47025
- Froelich, Piotr (with Löwdin, Per-Olov) On the Hartree-Fock scheme for a pair of adjoint operators. 85b:47020b
- Gadella, M. Construction of rigged Hilbert spaces to describe resonances and virtual states. 85j:47020
- Gadshiev, G. A. Multiparameter spectral theory of differential operators. (Russian) 85f:47020
- Iaev, G. A. Genetic operators and multiparameter spectral problems. (Russian) 85f:47020
- Kolomý, J. On the Kellogg method and its variants for finding of eigenvalues and eigenfunctions of linear selfadjoint operators. (German and Russian summaries) 85b:47019
- Löwdin, Per-Olov On the stability problem of a pair of adjoint operators. 85b:47020a
- See also Froelich, Piotr, 85b:47020b
- Mennicken, Reinhard Eigenvalue problems depending nonlinearly on the parameter. 85b:47021
- Mingarelli, Angelo B. The nonreal point spectrum of generalized eigenvalue problems. 85i:47021
- Mirzoev, G. G. Multiparameter spectral problem with Hammerstein operators. (Russian) (See 85d:00010)
- Pietach, Albrecht Distribution of eigenvalues and nuclearity. (See 85c:46001)
- Radsievskii, G. V. A way of proving the minimality and basis property of eigenvectors. (Russian) 85b:47022
- Shalkov, A. A. Estimates of meromorphic functions and summability theorems. 85d:47023
- Sleeman, B. D. See Browne, Patrick J., 85g:47025
- Ye, Hual An Operators that are expandable in eigenvectors. (Chinese) 85h:47018



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- Albrecht, J. See Goerlach, F., 85m:85049
- Andrushkiv, R. I. Bounds for eigenvalues of a class of unbounded, nonsymmetric operators. 85i:47025
- Ashorkin, V. I. Existence of positive eigenvectors in linear operators. (Russian) 85g:47052
- Bets, C. (with Gzyl, H.) ★ Probabilistic approach for comparing first eigenvalues. 85c:60117
- Bishn, A. Decaying states and the rigged Hilbert space formulation of quantum mechanics. (See 85f:00012)
- Cao, Ce Wen The trace of the spherical Schrödinger operator. (Chinese. English summary) 85f:35160
- Carl, Bernd Entropy moduli and eigenvalues of operators in Banach spaces. (See 85g:00027)
- Dobrokhotov, S. Yu. See Vorob'ev, Yu. M., 85g:81229
- Gadella, M. A description of virtual scattering states in the rigged Hilbert space formulation of quantum mechanics. 85g:81186
- Goerlach, F. (with Albrecht, J.) Die Monotonie der Templeschen Quotienten. [The monotonicity of the Temple quotients] 85m:85049
- Gzyl, H. See Bets, C., 85c:60117
- Kaiser, R. J. (with Retherford, J. R.) Eigenvalue distribution of nuclear operators: a survey. 85d:47025
- (with Retherford, J. R.) Eigenvalue distribution of nuclear operators: a survey. (See 85g:00027)
- Kulkarni, R. P. (with Limaye, B. V.) On the steps of convergence of approximate eigenvectors in the Rayleigh-Schrödinger series. 85d:85037
- Łasieć, Nobeja Convergence of eigenfunction expansions corresponding to nonnegative selfadjoint extensions of the Schrödinger operator for functions from class  $H_1^+$ . (Russian) 85b:34030
- Limaye, B. V. See Kulkarni, R. P., 85d:85037
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- Mueller, Rolf Erhard Discretization of multiparameter eigenvalue problems. 85g:85070
- Müller, Rolf Computations of holomorphic multiparameter eigenvalue problems. 85k:47026
- Osborn, T. A. (with Wong, Roderick) Schrödinger spectral kernels: high order asymptotic expansions. 85a:81113
- Retherford, J. R. See Kaiser, R. J., 85d:47025 and (85g:00027)
- Shkalkov, A. A. Zero distribution for pairs of holomorphic functions with applications to eigenvalue distribution. 85c:30046
- Vlasov, V. V. The  $k$ -fold minimality of root vectors of Keldysh-type pencils. (Russian) 85j:47014
- Vorob'ev, Yu. M. (with Dobrokhotov, S. Yu.) Quasiclassical asymptotics for discrete models of electron-phonon interaction: Maslov's method and adiabatic approximation. (Russian. English summary) 85g:81229
- Wong, Roderick See Osborn, T. A., 85a:81113

#### 47A99 None of the above, but in this section

- Albrecht, E. (with Neumann, Michael Mathias) Automatic continuity for operators of local type. 85h:47019
- Antosik, Piotr (with Swartz, Charles) The Nikodým boundedness theorem and the uniform boundedness principle. 85b:47023
- Brittin, Wesley E. (with Sakakura, Arthur Y.) Projection operator techniques in physics. 85k:47037
- Brüning, Jochen Diagonalization of holomorphic functions with values in  $W^*$ -algebras. 85c:47024
- Constantinescu, Tiberiu On transfer function in Hilbert spaces. 85a:47023
- Derkach, V. A. (with Tsakanovskii, E. R.) A class of operator-functions that are realizable by accretive operator colligations as transfer mappings of linear systems. (Russian) 85j:47021
- Harte, Robin Almost open mappings between normed spaces. 85b:47024
- Herrero, Domingo A. (with McDonald, John N.) On multicyclic operators and the Vasjunin-Nikol'skii disotheca. 85f:47023
- Kovarik, Zdzisław V. (with Sherif, Nagwa) Characterization of similarities between two  $n$ -frames of projectors. 85i:47022
- Kubo, Fumio Stability of operator inequalities. 85f:47021
- Lyantse, V. E. Can nonstandard analysis be ignored? (Jordan form of an operator in an infinite-dimensional space). (Russian) 85m:47011
- McDonald, John N. See Herrero, Domingo A., 85f:47023
- Neumann, Michael Mathias See Albrecht, E., 85h:47019
- Nikol'skii, N. K. (with Vasyunin, V. I.) Control subspaces of minimal dimension and root vectors. 85f:47022
- Sakakura, Arthur Y. See Brittin, Wesley E., 85k:47037
- Sherif, Nagwa See Kovarik, Zdzisław V., 85i:47022
- Shurygin, V. A. On the problem of eigenvectors of linear operators in constructive analysis. (Russian) 85k:47038
- Eigenvectors of completely continuous linear operators in constructive analysis. (Russian) 85k:47039
- Stochel, J. (with Szafraniec, F. H.) Boundedness of linear and related nonlinear maps. I. 85g:47026
- Swartz, Charles See Antosik, Piotr, 85b:47023
- Szafraniec, F. H. See Stochel, J., 85g:47026
- Tsakanovskii, E. R. See Derkach, V. A., 85j:47021
- Vasyunin, V. I. See Nikol'skii, N. K., 85f:47022

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- Aripov, R. G. A problem of the theory of invariants in a Banach space of sequences. (Russian) 85i:46030
- Aupetit, Bernard (with Zemánek, Jaroslav) On zeros of analytic multivalued functions. 85f:30087
- Buoni, John J. (with Klein, Albert J.; Scott, Brian M.; Wadhwa, Bhushan L.) On a power compactness in a Banach space. 85b:47025
- Chaves, M. On the eigenvalues of the exponential function of the product of two operators that commute with their anticommutator. (Spanish) 85a:47043
- Dudley, David (with Wang, Alan P.) Operator theory on the WKB method and Bremmer series. 85b:81020
- Giachetti, Daniela Optimal control in constrained problems. (Italian. English summary) 85d:49009
- Heinrich, S. A problem in discretization theory related to the approximation property of Banach spaces. 85h:46030
- Hendriksen, E. Moment methods in two point Padé approximation. 85f:41013
- Izumi, Saichi Convergence of generalized inverses and spline projectors. 85c:41054
- Klein, Albert J. See Buoni, John J.; et al., 85b:47025
- Klots, Lutz Peter Spektraltheorie Banach-Raum-wertiger homogener verallgemeinerte Felder. [Spectral theory of homogeneous generalized fields with values in a Banach space] 85j:60090
- Lucchetti, R. (with Patrone, F.) Some properties of "well-posed" variational inequalities governed by linear operators. 85a:49032
- Małak, W. Conditionally positive definite functions on linear spaces. 85d:43003
- Muratova, A. A. (with Tsakanovskii, E. R.) Controllability and observability of linear time-independent dynamical systems. (Russian) 85g:93016
- Nikoleenko, P. V. A property of kernels of families of Noether operators representing elements from  $K(S^{2n})$ . (Russian) 85j:46129
- Okoh, Frank (with Zoritto, Frank A.) Subsystems of the polynomial system. 85f:15001
- Pan, Ji Xun Subproper operators. (Chinese) 85e:47095
- Patrone, F. See Lucchetti, R., 85a:49032
- Pincus, J. D. On the integrality of principal functions. (See 85h:00009) (Not in MR)
- Przeworska-Rolewicz, D. Non-Leibniz algebras. 85e:44008
- Radyno, Ya. V. The space of vectors of exponential type. (Russian. English summary) 85b:46007
- Roth, Paul G. Bounded orbits of conjugation, analytic theory. 85c:47039
- Salomon, D. ★ Control and observation of neutral systems. 85e:93002
- Scott, Brian M. See Buoni, John J.; et al., 85b:47025
- Shubova, M. A. On the closeness of Riesz bases to bases that are orthonormal in a Hilbert space. (Russian. English summary) 85c:46018
- Swartz, Charles Continuity and hypocontinuity for bilinear maps. 85h:46006
- Tomilova, V. G. Projection-iteration methods for solving infinite systems of linear inequalities in Hilbert space. (Russian) 85m:85057
- Tsakanovskii, E. R. See Muratova, A. A., 85g:93016
- Valănescu, Ilie Continuous stationary processes in complete correlated actions. 85h:60060
- Wadhwa, Bhushan L. See Buoni, John J.; et al., 85b:47025
- Wang, Alan P. See Dudley, David, 85b:81020
- Yang, Ming Zhu (with Zhu, Guang Tian) The convergence theory for discrete-ordinate approximations in higher spatial dimensions. 85c:85130
- Yang, Yi Kun The  $K$  functional and approximation degrees. I. (Chinese) 85k:41030a
- The  $K$  functional and approximation degrees. II. (Chinese) 85k:41030b
- Zemánek, Jaroslav See Aupetit, Bernard, 85f:30087
- Zhu, Guang Tian See Yang, Ming Zhu, 85c:85130
- Zoritto, Frank A. See Okoh, Frank, 85f:15001

#### 47Bxx Single linear operators: special classes of operators

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- Lewis, R. T. See Evans, W. D.; et al., 85f:47004
- Zettl, A. See Evans, W. D.; et al., 85f:47004
- 47B05 Compact operators, Riesz operators
- Ahner, John F. Limiting behavior of solutions to integral equations when the resolvent kernel has a pole of order greater than unity. 85i:47023
- Aliprantis, C. D. (with Burkinshaw, O.) Factoring compact and weakly compact operators through reflexive Banach lattices. 85e:47025
- Buoni, John J. (with Klein, Albert J.; Scott, Brian M.; Wadhwa, Bhushan L.) On a power compactness in a Banach space. 85b:47025
- Burkinshaw, O. See Aliprantis, C. D., 85e:47025
- Chauveheid, Paul On a property of compact operators in Banach spaces. (French and German summaries) 85a:47024
- DeVito, Carl L. Compactlike operators on locally convex spaces. 85e:47026
- Harte, Robin A quantitative Schauder theorem. 85d:47024
- Klein, Albert J. See Buoni, John J.; et al., 85b:47025
- Leinfelder, Herbert A remark on a paper: "A compactness condition for linear operators of function spaces" [J. Operator Theory 1 (1979), no. 1, 49-54; MR 80b:47044] by L. D. Pitt. 85c:47019
- Li, Shao Kuan On sequences of compact operators and measures of noncompactness. (Chinese) 85k:47040
- (Pitt, Loren D.) See Leinfelder, Herbert, 85c:47019
- Schäffe, Friedrich W. Charakterisierung "kompakter" hermitescher Operatoren. [Characterization of "compact" Hermitian operators] 85f:47024
- Scott, Brian M. See Buoni, John J.; et al., 85b:47025
- Stampfli, Joseph G. An  $l^p$  and  $l^\infty$  version of Tacon's theorem. 85b:47026

Tursunkulov, B. Completely continuous operators in generalized Hölder spaces. (Russian) **85a:47025**

Wadhwa, Bhushan L. See Buoni, John J.; et al., **85b:47025**

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Ahuja, Mario (with Chatelin, Françoise) The use of defect correction to refine the eigenvalues of compact integral operators. **85a:65174**

Alena, P. On Calkin's theorem. (Italian summary) **85b:47053**

Arora, S. C. (with Kumar, Ramesh) Joint essential numerical range. (Serbo-Croatian summary) **85b:47006**

Azisov, T. Ya. (with Shlyakman, M. Ya.) On the Kühne-Iokhvidov-Shtraus effect. (Russian) **85c:47034**

Beausamy, B. Commutation des opérateurs de classe  $C_1$  avec les opérateurs compacts. [Commutation of  $C_1$  operators with compact operators] **85b:47003**

Chatelin, Françoise See Ahuja, Mario, **85a:65174**

Froelich, John Compact operators in the algebra of a partially ordered measure space. **85i:47005**

Ghahramani, F. Compact elements of weighted group algebras. **85i:43004**

Kittaneh, Fuad On the structure of polynomially normal operators. **85g:47030**

Krishnamachari, N. S. Tensor product of compact operators on non-Archimedean Banach spaces. **85m:46080**

Kumar, Ramesh See Arora, S. C., **85b:47006**

Nakasato, Hiroshi Extension of derivations in the algebra of compact operators. **85m:46058**

Reinow, O. I. Un contre-exemple à une conjecture de A. Grothendieck. (English summary) [A counterexample to a conjecture of A. Grothendieck] **85i:46012**

Shlyakman, M. Ya. See Azisov, T. Ya., **85c:47034**

Shurygin, V. A. Eigenvectors of completely continuous linear operators in constructive analysis. (Russian) **85k:47039**

Szeptycki, P. On the compactness theorem of Luxemburg and Zaanen. (Arabic summary) **85c:47048**

Wrobel, Volker Strikt singuläre Operatoren in lokalkonvexen Räumen. II. Beschränkte Operatoren. [Strictly singular operators in locally convex spaces. II. Bounded operators] **85k:47026**

47B10 Hilbert-Schmidt operators, trace class operators, nuclear operators,  $p$ -summing operators, etc.

Birman, M. Sh. (with Solomyak, M. Z.) Compact operators with power asymptotic behavior of the singular numbers. (Russian. English summary) **85e:47027**

Biel, Ron C. A remark on  $(p, q)$ -absolutely summing operators in  $l^p$ -spaces. **85b:47027**

Bourgain, J. Opérateurs sommants sur l'algèbre du disque. [Summing operators on the disk algebra] **85j:47022**

Carl, Bernd Entropy moduli and eigenvalues of operators in Banach spaces. (See **85g:00027**)

On the entropy of absolutely summing operators. **85j:47023**

(with Stephani, Irtraud) Estimating compactness properties of operators by the aid of generalized entropy numbers. **85m:47012**

Entropy numbers of  $r$ -nuclear operators between  $L_p$  spaces. **85e:47028**

Chuchava, I. I. See Geller, V. A., **85g:47027**

Costé, Alain Sur les opérateurs représentables. (English summary) [Representable operators] **85b:47020**

García Lafuente, J. M. A note on structure of quasi- $\lambda$ -nuclear maps. **85b:47021**

Geller, V. A. (with Chuchava, I. I.) The second conjugate to a summing operator. (Russian) **85g:47027**

Janson, Svante (with Wolff, Thomas H.) Schatten classes and commutators of singular integral operators. **85a:47026**

Kaiser, R. J. (with Retherford, J. R.) Eigenvalue distribution of nuclear operators: a survey. **85d:47025**

(with Retherford, J. R.) Eigenvalue distribution of nuclear operators: a survey. (See **85g:00027**)

Litvinov, G. L. Approximation properties of locally convex spaces and the problem of single-valuedness of the trace of a linear operator. (Russian) **85g:47028**

Martin Peinador, Elena Hilbert-Schmidt operators in relation to summability. (See **84j:00009**) (Not in MR)

Paulik, Augustin Schur inequalities for the eigenvalues of Hilbert-Schmidt operators. **85c:47020**

Peller, V. V. Continuity properties of the averaging projection onto the set of Hankel matrices. **85c:47021**

Power, S. C. Another proof of Lidskii's theorem on the trace. **85g:47029**

Nuclear operators in nest algebras. **85b:47028**

Reinow, O. I. Disappearance of tensor elements in the scale of  $p$ -nuclear operators. (Russian) **85k:47041**

Retherford, J. R. See Kaiser, R. J., **85d:47025** and **(85g:00027)**

Rodés Usán, Alvare A. Note on absolute summability in  $L$ -systems. (Spanish) (See **85i:00012**)

Schlitt, Carsten Entropy numbers of diagonal operators between symmetric Banach spaces. **85e:47029**

Shields, Allen L. An analogue of a Hardy-Littlewood-Fejér inequality for upper triangular trace class operators. **85c:47022**

Solomyak, M. Z. See Birman, M. Sh., **85e:47027**

Stephani, Irtraud See Carl, Bernd, **85m:47012**

Teixeira, M. F. Weyl's inequality in Banach spaces. **85e:47030**

Tița, N. Some  $(s, p)$ -mixing operators. (Romanian. English summary) **85m:47013**

Widom, Harold Corrigendum and addendum: "Asymptotic expansions of determinants for families of trace class operators" [Indiana Univ. Math. J. **27** (1978), no. 3, 449-478; MR **58** #2402]. **85f:47025**

Wolff, Thomas H. See Janson, Svante, **85a:47026**

secondary classifications (47B10)

Becker, Richard Sur un problème de représentation intégrale, les applications sommantes, et la propriété de Radon-Nikodym. (English summary) [On a problem of integral representation, summing maps, and the Radon-Nikodym property] **85i:46014**

Carl, Bernd (with Kühn, Thomas) Entropy and eigenvalues of certain integral operators. **85e:47041**

Chuprunov, A. N. See Muskhart, D. Kh., **85e:40005**

Cobos, Fernando On the type of interpolation spaces and  $S_{p,q}$ . **85i:46099**

Conradie, J. J. (with Swart, Johan) On Schwartz operator ideals determined by the order-bounded sets in a Banach lattice. **85i:47045**

Gil, M. I. Estimates of norms of resolvents of nonselfadjoint operators "close" to selfadjoint and unitary operators. (Russian) **85b:47001**

Jarchow, Hans Banach spaces and Hilbert-Schmidt operators. **85i:46024**

On operator ideals related to type 2 and cotype 2 operators. **85k:47001**

Kittaneh, Fuad On nearly  $\theta$ -operators. **85c:47005**

König, Hermann On the tensor stability of  $s$ -number ideals. **85i:47046**

Kühn, Thomas See Carl, Bernd, **85e:47041**

Laurie, Cecelia (with Longstaff, W. E.) A note on rank-one operators in reflexive algebras. **85b:47052**

Li, Shao Kuan Scattering and symbol of unitary operators. (Chinese) **85a:47013**

Longstaff, W. E. See Laurie, Cecelia, **85b:47052**

Mekler, A. A. Letter to the editors: "The averaging operator with respect to a countable partition on a minimal symmetric invariant ideal of the space  $L^1(0,1)$ " [Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI) **107** (1982), 136-149; MR **84c:46027**]. (Russian) **85d:46036**

Muskhart, D. Kh. (with Chuprunov, A. N.) Sufficient topologies and norms. (Russian. English summary) **85c:60005**

Nordgren, Eric A. (with Radjavi, Heydar; Rosenthal, Peter) Triangularizing semigroups of compact operators. **85b:47047**

Pietach, Albrecht Distribution of eigenvalues and nuclearity. (See **85c:46001**)

Ideals of multilinear functionals (designs of a theory). (See **85g:00027**)

Pisier, Gilles Counterexamples to a conjecture of Grothendieck. **85m:46017**

Popa, Nicolae Symmetric  $p$ -normed spaces for  $0 < p \leq 1$ . **85k:46005**

Queiré, João Filipe A norm for matrices over a principal ideal ring and some applications. (Portuguese. English summary) **85j:16023**

Radjavi, Heydar See Nordgren, Eric A.; et al., **85b:47047**

Reinow, O. I. Simple proof of two theorems of A. Grothendieck. (Russian. English summary) **85m:46009**

Roccaforte, Raymond Asymptotic expansions of traces for certain convolution operators. **85m:47022**

Rosenthal, Peter See Nordgren, Eric A.; et al., **85b:47047**

Swart, Johan See Conradie, J. J., **85i:47045**

47B15 Hermitian and normal operators (spectral measures, functional calculus, etc.)

Alekseev, Vladimir Mikhailovich Existence of a bounded function of the maximal spectral type. (Not in MR)

Behrends, Ehrhard Normal operators and multipliers on complex Banach spaces and a symmetry property of  $L^1$ -predual spaces. **85m:47014**

Du, Hong Ke Some necessary and sufficient conditions for an operator to be Hermitian, and related results. (Chinese) **85k:47042**

See also Hou, Jin Chuan, **85f:47026**

Hou, Jin Chuan (with Du, Hong Ke) A note on two formal Putnam-Fuglede theorems. (Chinese) **85f:47026**

Kaplansky, Irving Normal antilinear operators on a Hilbert space. **85e:47031**

Kittaneh, Fuad On the structure of polynomially normal operators. **85g:47030**

Lewis, John Trevor (with Schreiber, Morris) On a theorem of Weyl. **85b:47022**

Matsumoto, Kengo Selfadjoint operators as a real span of 5 projections. **85g:47031**

Murugas, Roderic Rank of positive matrix measures. **85c:47023**

Parasandyan, A. S. Unitary aggregates of operators and their analytic characterization in the space  $L_2(a, b)$ . (Russian. Armenian summary) **85g:47032**

Pokryva, Andrej Spectral approximation of positive operators by iteration subspace method. (Russian and Czech summaries) **85f:47027**

Rosenberg, Milton Explicit structure of the 2-majorant of an operator-valued measure in a special case. **85e:47027**

Schreiber, Morris See Lewis, John Trevor, **85b:47022**

Sen, Dillip Kumar Classes of operators on Banach spaces. **85b:47023**

Szarek, S. The finite-dimensional basis problem with an appendix on nets of Grassmann manifolds. **85i:47024**

secondary classifications (47B15)

Abramov, Yu. Sh. Zones and spectra of families of abstract Toeplitz operators. (Russian) **85b:47031**

Ackermans, S. T. M. (with van Eijndhoven, S. J. L.; Martens, F. J. L.) On almost commuting operators. **85c:47033**

Ando, Tsuyoshi An inequality between symmetric function means of positive operators. **85b:47014**

Berberian, S. K. The algebra of thin operators is directly finite. **85m:47045**

Bognár, J. A proof of the spectral theorem for  $J$ -positive operators. **85a:47041**

Boydashiev, Khristo N. A generalization of the Fuglede-Putnam theorem. **85e:47002**

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- Bourgain, J. Opérateurs sommants sur l'algèbre du disque. [Summing operators on the disk algebra] 85j:47022
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- Ciesielski, Z. (with Figiel, T.) Spline bases in classical function spaces on compact  $C^\infty$  manifolds. I. 85f:46060a
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- Ghoussoub, N. (with Talagrand, Michel) A noncompletely continuous operator on  $L_1(G)$  whose random Fourier transform is in  $c_0(G)$ . 85k:46056
- Gorin, E. A. How does the spectrum of an endomorphism of the disk algebra look? (Russian. English summary) 85c:46052
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- Li, Rong Lu Representations and extensions of bounded linear operators. (Chinese) (Not in MR)
- Löfström, Jörgen A nonexistence theorem for translation invariant operators on weighted  $L_p$ -spaces. 85d:42018
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- Dinescu, Gabriela On semiscalar operators. 85k:47055
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- (with Wang, Sheng Wang) A spectral duality theorem for closed operators. 85j:47038
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- Duality theorems for unbounded decomposable operators. (Chinese) 85d:47034
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- (with Yoshino, Takashi) A characterization of spectral operators on Hilbert spaces. 85h:47040
- Wang, Sheng Wang (with Erdélyi, I.) A duality theorem for unbounded closed operators. 85a:47040
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- See also Erdélyi, I., 85e:47050 and 85j:47038
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- Liu, Guang Yu Spectral decomposition of several commuting multiplication operators. (Chinese) (Not in MR)
- Liu, Long Fu A note on reductivity of operators. 85f:47019
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- Spectral representation of local semigroups associated with Klein-Landau systems. 85f:47045
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- Vasilescu, F.-H. ★ Analytic functional calculus and spectral decompositions. 85b:47016
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- Franco, Z. M. (with Kaper, H. G.; Kwong, Man Kam; Zettl, A.) Bounds for the best constant in Landau's inequality on the line. 85m:26018
- Kaper, H. G. See Franco, Z. M.; et al., 85m:26018
- Kwong, Man Kam See Franco, Z. M.; et al., 85m:26018
- Shepelev, A. V. Dissipative bi-extensions of a densely defined Hermitian operator. (Russian) 85k:47047
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- Martens, F. J. L. See Achermann, S. T. M.; et al. **85c:47033**
- Nguyễn Văn Mậu Characterization of commutators with algebraic operators. **85k:47059**
- Piscus, J. D. On the integrality of principal functions. (See **85h:00009**) (Not in MR)
- Shul'man, V. S. Multiplication operators and traces of commutators. (Russian. English summary) **85f:47037**

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- Erdős, J. A. (with Giropoulos, S.) On some commutators of operators. **85m:47046**
- Giffether, F. (with Larson, David R.) Commutants modulo the compact operators of certain CSL algebras. II. **85d:47051**
- Giropoulos, S. See Erdős, J. A., **85m:47046**
- Hsiao, Sheng Yen On numerical ranges of generalized derivations and related properties. **85c:47001**
- Larson, David R. See Giffether, F., **85d:47051**
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- Schweinsberg, Allen The operator equation  $AX - XB = C$  with normal  $A$  and  $B$ . **85a:47021**
- Synnatschke, J. Einige verbandstheoretische Eigenschaften und Normabschätzungen eines elementaren Operators. (English summary) [Some lattice-theoretic properties and norm estimates of an elementary operator] **85h:47045**

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- (with Shlyakman, M. Ya.) On the Kühne-Iokhvidov-Shtraus effect. (Russian) **85c:47034**
- On the theory of extensions of  $J$ -isometric and  $J$ -symmetric operators. (Russian) **85c:47051**
- Bognár, J. A proof of the spectral theorem for  $J$ -positive operators. **85c:47041**
- Borov, Emil The generalized inverse of linear operators on spaces with indefinite metric. **85h:47042**
- Chunaeva, M. S. Generalized resolvents in a space with indefinite metric and characteristic functions. (Russian) **85b:47038**
- See also Vernik, A. N., **85d:47038** and **85k:47067**
- Etkin, A. E. Generalized resolvents of a symmetric operator in the space  $\Pi_{\kappa}$ . (Russian) **85d:47036**
- Generalized resolvents of a symmetric operator in the space  $\Pi_{\kappa}$ . (Russian) **85k:47062**
- Ginsburg, Yu. P. Reconstruction of a multiplicative integral from its modulus. (Russian) **85k:47063**
- Gelinskii, L. B. A generalization of the matrix Nevanlinna-Pick problem. (Russian. English and Armenian summaries) **85g:47049**
- Iokhvidov, E. I. See Asisov, T. Ya.; et al., **85k:47000**
- Iokhvidov, I. S. (with Krein, M. G.; Langer, Heinz) ★ Introduction to the spectral theory of operators in spaces with an indefinite metric. **85g:47050**
- See also Asisov, T. Ya.; et al., **85k:47060**
- Jonas, P. On spectral distributions of definitizable operators in Krein space. **85h:47043**
- Katz, I. S. Linear relations generated by canonical differential equations. (Russian) **85k:47064**
- Khatakevich, V. A. The generalized Poincaré metric on an operator ball. (Russian) **85c:47052**
- Invariant subspaces and properties of the spectrum of plus-operators with a quasiaffine power in a Krein space. (Russian) **85k:47065**
- Krein, M. G. See Iokhvidov, I. S.; et al., **85g:47050**
- Langer, Heinz On measurable Hermitian indefinite functions with a finite number of negative squares. **85c:47035**
- (with Najman, B.) Perturbation theory for definitizable operators in Krein spaces. **85c:47053**
- See also Iokhvidov, I. S.; et al., **85g:47050**
- Li, Shao Kuan Semihypnormal operators on an indefinite inner product space. (Chinese) **85f:47038**
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- Myung, Hye Chul A generalization of Hermitian and unitary operators in a Hilbert space. **85j:47042**
- Najman, B. Correction to the paper: "Perturbation theory for selfadjoint operators in Pontrjagin spaces. I" [Glas. Mat. Ser. III 15(35) (1980), no. 2, 351-371; MR 82c:47048]. **85g:47051**
- See also Langer, Heinz, **85c:47053**
- Nakamoto, Ritsuo A note on generalized  $p$ -selfadjoint operators. **85d:47037**
- Potapov, V. P. A theorem on the modulus. II. (Russian) **85e:47054**
- Ritsner, V. S. Bi-extensions of  $J$ -Hermitian lineals. (Russian) **85f:47039**
- Rutkas, A. G. Unitary realization of holomorphic functions in a space with indefinite metric. (Russian. English summary) **85j:47043**
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- Vernik, A. N. (with Chunaeva, M. S.) Symmetric dilatations of linear relations in a space with indefinite metric. (Russian) **85d:47038**
- (with Chunaeva, M. S.) Selfadjoint dilatations of a linear relation in a space with indefinite metric. (Russian) **85k:47067**
- Yan, Shao Zong Unitary and selfadjoint operators in a space with indefinite metric. (Chinese) (Not in MR)

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- Zhang, Yin Nan Commutation relations on an indefinite inner product space. (Chinese) **85c:47042**

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- Broadbridge, P. Existence theorems for Segal quantization via spectral theory in Krein space. **85d:81061**
- Capri, Anton Z. (with Gröbl, Gebhard; Kobes, Randy) A quantization of the electromagnetic field. (French summary) **85f:81067**
- Dadaashyan, K. Yu. (with Khorushii, S. S.) Field algebras in quantum theory with indefinite metric. (Russian. English summary) **85d:81062**
- Etkin, A. E. A first-order boundary value problem with a spectral parameter in the boundary condition. (Russian) **85c:47067**
- Gröbl, Gebhard See Capri, Anton Z.; et al., **85f:81067**
- Khorushii, S. S. See Dadaashyan, K. Yu., **85d:81062**
- Kobes, Randy See Capri, Anton Z.; et al., **85f:81067**
- Kogut, E. A. (with Yantsevich, A. A.) Unitary equivalence of linear discrete systems and transfer functions with an operator argument. (Russian) **85h:93026**
- Kovalishina, I. V. (with Potapov, V. P.) ★ Integral representation of Hermitian positive functions. **85c:47010**
- Ma, Ji Pu A pseudoholomorphic operator and invariant subspace. (Chinese) **85k:47008**
- Potapov, V. P. See Kovalishina, I. V., **85c:47019**
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- Yantsevich, A. A. See Kogut, E. A., **85h:93026**

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- Aliprantis, C. D. (with Burkinshaw, O.) Some remarks on orthomorphisms. **85b:47039**
- (with Burkinshaw, O.) The components of a positive operator. **85b:47040**
- Alpay, Şafak Positive precompact operators on locally convex lattices. (Not in MR)
- Arendt, W. Spectral properties of Lamperti operators. **85d:47040**
- Ashorkin, V. I. Existence of positive eigenvectors in linear operators. (Russian) **85g:47052**
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- Bruck, Ronald E. Asymptotic behavior of nonexpansive mappings. 85d:47057
- Fan, Xian Ling Generalized degree theory for uniform limits of multivalued  $A$ -proper mappings. (Chinese. English summary) 85k:47097
- Fournier, Gilles A good class of eventually condensing maps. 85d:47058

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- Dai, Xing De Quasi-nonexpansive mappings. (Chinese. English summary) 85k:47100
- Kirk, W. A. Fixed point theory for nonexpansive mappings. II. 85a:47062
- Massatt, Paul On obtaining ultimate boundedness for  $\alpha$ -contractions. 85b:34063
- Milojević, P. S. Continuation theory for  $A$ -proper and strongly  $A$ -closed mappings and their uniform limits and nonlinear perturbations of Fredholm mappings. 85i:47054

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- Altman, Mieczysław Weak contractor directions and weak directional contractions. 85b:47063
- Bakhtin, I. A. Fixed-point theorems for monotone operators. (Russian) 85c:47051
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- Fixed points of monotone operators in Banach spaces with extremal cones. (Russian) 85k:47098b
- Bakhtin, V. I. Existence of fixed points of concave operators. (Russian) 85i:47058
- Balakrishna Reddy, K. (with Subrahmanyam, P. V.) Directional contractors and fixed points of multivalued mappings. 85g:47078
- Belova, R. V. Uniformly decaying continuous mappings of open sets in Banach space. (Russian) 85c:47078
- Bose, R. K. (with Sahani, D.) Weak convergence and common fixed points of nonexpansive mappings by iteration. 85j:47056
- See also Sahani, D., 85g:47082
- Browder, Felix E. Coincidence theorems, minimax theorems, and variational inequalities. 85b:47099
- Remarks on the paper: "Boundary conditions for condensing mappings" [Nonlinear Anal. 8 (1984), no. 3, 209-219] by Q. Y. Yu and Browder. 85j:47062b
- See also Yu, Qing Yu, 85j:47062a
- Brown, Robert F. Multiple fixed points of compact maps on wedge-like ANRs in Banach spaces. 85g:47079
- Carmona Álvarez, José Measure of noncompactness and fixed points of condensing nonexpansive mappings in locally convex spaces. (Spanish. English summary) 85j:47057
- Cho, Yeol Je On successive approximations for nonlinear mappings. 85a:47058
- Dai, Xing De Quasi-nonexpansive mappings. (Chinese. English summary) 85k:47100
- Dặng Đình Ấng (with Lê Hoàn Hoa) On a fixed point theorem of Krasnosel'skii and triangle contractive operators. 85k:47101
- Das, Gokulananda (with Debata, J. P.) On common fixed points of hemicontractive mappings. 85h:47064
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- On the continuity of fixed points. 85i:47059
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- The fixed point and eigenvalues of nonlinear operator. (Chinese) (Not in MR)
- Dugundji, James (with Granas, A.) A proof of the Ryll-Nardzewski fixed point theorem. 85f:47056
- Edelstein, Michael On a fixed-point property of reflexive locally uniform convex Banach spaces. 85m:47060
- (with Tingley, Daryl) Some remarks on the location of fixed points. 85m:47061
- Elton, J. (with Lin, Pei Kee; Odell, E.; Szarek, S.) Remarks on the fixed point problem for nonexpansive maps. 85d:47059
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- (with Massa, Silvio) Some remarks on nonexpansive mappings in Hilbert spaces. (Italian summary) 85f:47057
- Goncharov, G. M. (with Lubashevskii, V. K.) Calculation of general fixed points for generalized-nonexpanding operators by the iteration method. (Russian) 85c:47079

- Existence of a general eigenvector for an aggregate of partially compact operators. (Russian) 85h:47066
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- Hadžić, Olga (with Gajić, Ljiljana) A common fixed-point theorem in locally convex spaces. 85e:47053
- A Leray-Schauder principle for multivalued mappings in topological vector spaces. (Serbo-Croatian summary) 85f:47058
- (with Gajić, Ljiljana) On the equation  $Tx = F(x, Q(Tx))$  in locally convex spaces. (Serbo-Croatian summary) 85h:47067
- Some applications of a common fixed point theorem. (Romanian summary) 85i:47062
- (with Gajić, Ljiljana) Some applications of fixed point theorems for multivalued mappings on minimax problems in topological vector spaces. (French and Russian summaries) 85e:47080
- Imdad, M. See Khan, Mohd. Saeed. 85g:47080
- Jaggi, D. S. On fixed points of nonexpansive mappings. 85a:47060
- Jaworowski, Jan An antipodal coincidence theorem for families of compact perturbations. 85a:47061
- Jošić, S. R. (with Kasralikar, S. N.) A fixed point theorem for nonexpansive mappings. 85e:47054
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- (with Sternfeld, Y.) The fixed point property for nonexpansive mappings in certain product spaces. 85j:47058
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- (Kuhfittig, P. K. F.) See Emmanuele, Giovanni. 85c:47053
- Kushen'kin, S. N. Construction of a sublinear projector on a set of fixed points of a sublinear operator. (Russian) 85h:47068
- Lê Hoan Hoa See Đặng Đình Áng. 85k:47101
- Lin, Pei Kee See Elton, J.; et al. 85d:47059
- Lubashevskii, V. K. See Goncharov, G. M. 85e:47079
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- Mavar, Zvonimir A fixed point theorem in a reflexive Banach space. 85a:47063
- Miyaura, Suga See Miyasaki, Ken-ichi; et al. 85g:47081
- Miyasaki, Ken-ichi (with Kawatani, Takeo; Miyaura, Suga) Some ergodic theorems for a finite family of nonexpansive mappings. 85g:47081
- Iteration methods for common fixed points of nonexpansive mappings. 85e:47055
- Naimpally, S. A. (with Singh, K. L.) Sequence of iterates in locally convex spaces. 85e:47056
- (with Singh, K. L.; Whitfield, J. H. M.) Fixed points and sequences of iterates in locally convex spaces. 85a:47064
- (with Singh, K. L.) Extensions of some fixed point theorems of Rhoades. 85h:47069
- (with Singh, K. L.; Whitfield, J. H. M.) Fixed points and nonexpansive retracts in locally convex spaces. 85m:47062
- Nguyễn Huy Việt Some fixed point theorems for nowhere normal-outward set valued mappings. 85j:47059
- Odell, E. See Elton, J.; et al. 85d:47059
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- Prasad, Devi Common fixed point of mappings in a uniformly convex Banach space with a new functional inequality. 85f:47060
- Rajput, S. S. See Sharma, P. L. 85i:47066
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- Rhoades, B. E. Contractive definitions revisited. 85d:47060
- Rossati, Franco See Delbosco, Domenico; et al. 85f:47055
- Rus, Ioan A. Fixed points and surjectivity for  $(\alpha, \varphi)$ -contraction. 85h:47070
- Rybiński, L. See Kisilewicz, Michał. 85i:47064
- Sahani, D. (with Bose, R. K.) Common fixed points of mappings in a uniformly convex Banach space. 85g:47082
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- Saint-Raymond, Jean Points fixes des multiapplications à valeurs convexes. (English summary) [Fixed points of multivalued maps with convex values] 85e:47083
- Samanta, S. K. Fixed point theorems for non-self-mappings. 85k:47104
- Sehgal, V. M. (with Singh, Sankatha Prasad; Watson, Bruce B.) A coincidence theorem for topological vector spaces. 85a:47066
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- (with Singh, Sankatha Prasad) A fixed point theorem in reflexive Banach spaces. 85j:47060
- (with Waters, Charlie) Some random fixed point theorems for condensing operators. 85g:47083
- Sharma, P. L. (with Rajput, S. S.) Fixed point theorem in Banach spaces. 85i:47066
- Singh, K. L. See Naimpally, S. A.; et al. 85a:47064; Naimpally, S. A. 85c:47056; 85h:47069 and 85m:47062
- Singh, S. L. A note on the convergence of sequence of iterates. III. 85j:47061
- Singh, Sankatha Prasad (with Watson, Bruce B.) Proximity maps and fixed points. 85c:47057
- See also Sehgal, V. M.; et al. 85a:47066; Sehgal, V. M. 85j:47060 and Guzzardi, Renato; et al. (85g:65009)
- Sternfeld, Y. See Kirk, W. A. 85j:47058
- Subrahmanyam, P. V. See Balakrishna Reddy, K. 85g:47078
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- Terekhin, M. T. Existence of a fixed point of a nonlinear operator. (Russian) 85m:47063
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- Noncontractive uniformly Lipschitzian semigroups in Hilbert space. 85k:47105
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- Watson, Bruce B. See Sehgal, V. M.; et al. 85a:47066; Singh, Sankatha Prasad. 85c:47057 and Guzzardi, Renato; et al. (85g:65009)
- Whitfield, J. H. M. Weak fixed point property and Banach lattices. 85f:47061
- See also Naimpally, S. A.; et al. 85a:47064 and 85m:47062
- Williamson, T. E. A geometric approach to fixed points of non-self-mappings  $T: D \rightarrow X$ . 85a:47067
- Yang, Shu Lang Fixed-point theorems in a Banach space with a cone. (Chinese. English summary) 85k:47106
- Some results on fixed points of set-valued mappings. (Chinese. English summary) 85i:47107
- Yu, Qing Yu (with Browder, Felix E.) Boundary conditions for condensing mappings. 85j:47062a
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- Zamfirescu, Tudor Convergence to fixed points on normed linear spaces. 85f:47063
- Zhang, Shi Sheng Recent development of the theory of fixed points. I. B. (Chinese) 85e:47068
- Zhao, Han Bin Generalized nonexpansive type mappings and common fixed point theorems in Banach spaces. 85k:47108
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- Anderson, D. E. (with Singh, K. L.; Whitfield, J. H. M.) Fixed points for left-reversible semigroups in convex metric spaces. 85c:54074
- (with Singh, K. L.; Whitfield, J. H. M.) Common fixed points for family of mappings. 85h:54079
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- Bruck, Ronald E. Asymptotic behavior of nonexpansive mappings. 85d:47057
- Chen, Shao Zhong See Liu, Zuo Shu. 85k:54051 and (Not in MR)
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- Gliklikh, Yu. E. See Borisovich, Yu. G. 85i:58026
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- Kaneko, Hideaki Applications on approximately compact sets. 85d:41032
- Kominek, Z. Some remarks on the Boyd-Wong theorem. (Serbo-Croatian summary) 85b:54066
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- Liu, Zuo Shu (with Chen, Shao Zhong) A fixed point theorem for random set-valued mappings. (Chinese) (Not in MR)
- (with Chen, Shao Zhong) On fixed-point theorems of random set-valued maps. 85k:54051
- McClendon, J. F. Minimax and variational inequalities for compact spaces. 85k:49032
- Micako, A. (with Palczewski, B.) Some generalization of certain O. Hadžić contraction type theorems. 85m:54049
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- Rao, I. H. N. (with Rao, K. P. R.) Unique common fixed point of a pair of nonlinear mappings. 85d:54056
- Rao, K. P. R. See Rao, I. H. N. 85d:54056



- Reich, Simeon. See Israel, Maximiano M., 85g:47066
- Sahney, B. N. (with Singh, K. L.; Whitfield, J. H. M.) Best approximations in locally convex spaces. 85b:41048
- Singh, K. L. See Sahney, B. N.; et al., 85b:41048; Anderson, D. E.; et al., 85c:54074 and 85h:54079
- Swaminathan, S. Normal structure in Banach spaces and its generalisations. 85h:46031
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Erratum: "Random fixed point theorem in probabilistic analysis" [Nonlinear Anal. 5 (1981), no. 2, 113-122; MR 82c:60114]. 85h:60096

#### 47H12 Spectral theory of nonlinear operators

- Edmunds, D. E. (with Webb, J. R. L.) Remarks on nonlinear spectral theory. (Italian summary) 85a:47069
- Kardashov, V. R. Structure of the spectrum and estimates for eigenvalues of nonlinear homogeneous operators. (Russian) 85a:47070
- Pacella, Filomena. Note on spectral theory of nonlinear operators: extensions of some surjectivity theorems of Fufik and Nečas. 85f:47063
- Stathakopoulos, Konstantin. Stetigkeit des Spektrums im kleinen einer Klasse nichtlinearer Operatoren. I. (English summary) [Continuity of the spectrum in the small of a class of nonlinear operators. I] 85j:47063
- Webb, J. R. L. See Edmunds, D. E., 85a:47069
- Weber, Horst.  $\varphi$ -asymptotisches Spektrum und Surjektivitätssätze vom Fredholm Typ für nichtlineare Operatoren mit Anwendungen. [ $\varphi$ -asymptotic spectrum and surjectivity theorems of Fredholm type for nonlinear operators, and applications] 85i:47067
- Zhang, Qing Yong. Eigenvalues of some nonlinear operators. (Chinese) (Not in MR)

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- Du, Xu Guang. The fixed point and eigenvalues of nonlinear operator. 85h:47065
- Hess, Peter. See Beltramo, Alex., 85i:35073

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- Ackermann, S. Axiomatische Bifurkationstheorie. (English and Russian summaries) [Axiomatic bifurcation theory] 85a:47071
- Appell, Jürgen. "Genaue" Fixpunktsätze und nichtlineare Sturm-Liouville-Probleme. (English summary) ["Sharp" fixed-point theorems and nonlinear Sturm-Liouville problems] 85d:47061
- Bautshke, F. Theorems on the existence of asymptotic points of bifurcation for the equation  $Au + \lambda Tu = 0$  in a Banach space. (Russian) 85f:47064
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- Fetisov, Yu. M. Some regularizing algorithms for nonlinear problems with a monotone operator. (Russian) 85f:47065
- Furi, Massimo. (with Pera, M. Patrizia; Vignoli, Alfonso) Components of positive solutions for nonlinear equations with several parameters. (Italian summary) 85a:47072
- Gupta, Chaitan P. Continuation theorems for nonlinear equations. 85f:47066
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- Hofmann, Bernd. Zur Regularisierung nichtlinearer inverser Probleme. II. [Regularization of nonlinear inverse problems. II] 85f:47067
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- McKenna, P. J. On some semilinear problems without compactness. 85i:47068
- Mika, Janusz Roman. See Pack, D. C.; et al., 85j:47067
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- Musaeu, V. M. Investigation of the solution of a nonlinear operator equation of Volterra-Uryson type with retarded argument. (Russian) (See 85k:35001)
- Nieto, J. J. See Kannan, Rangachary; et al., 85j:47064a and 85j:47064b
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- Park, Sehie. See Park, Jong An, 85c:47090
- Pavel, Nicolas H. Semilinear equations with dissipative time-dependent domain perturbations. 85b:47067
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- Schechter, Eric. Perturbations of regularizing maximal monotone operators. 85k:47110
- Correction to: "Perturbations of regularizing maximal monotone operators" [Israel J. Math. 43 (1982), no. 1, 49-61; MR 85k:47110] and a note on injectiveness. 85k:47111
- Schulze, Reinhard. ★ Approximative Methoden für Gleichungen mit quasikontraktiven Operatoren. (German) [Approximative methods for equations with quasicontractive operators] 85a:47073
- Soltanov, K. N. Solvability of nonlinear equations and some imbedding theorems. (Russian. English and Azerbaijani summaries) 85k:47112
- Sukhinin, M. F. (with Liito Ndegeva Vangoddu) Existence and uniqueness of quasisolutions of certain nonlinear equations in a Hilbert space. (Russian) 85d:47065
- Torrejón, Ricardo. Some remarks on nonlinear functional equations. 85c:47059
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- Węgrzyk, Roman. Fixed-point theorems for multivalued functions and their applications to functional equations. 85g:47086
- Yu, Qing Yu. See Chen, Wen Yuan, 85h:47109
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- Ahmed, N. U. Properties of relaxed trajectories for a class of nonlinear evolution equations on a Banach space. 85h:49012
- Alexander, J. C. (with Antman, Stuart S.; Deng, Shi Tao) Nonlinear eigenvalue problems for the whirling of heavy elastic strings. II. New methods of global bifurcation theory. 85c:73036
- Altman, Mieczysław. A general local existence theorem for quasilinear evolution equations in nonreflexive Banach spaces. 85b:34070
- A new approach to quasilinear evolution equations in nonreflexive Banach spaces. 85f:34112
- Antman, Stuart S. Large lateral buckling of nonlinearly elastic beams. 85h:73024
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- Rao, A. N. V. (with Padgett, W. J.) Stability for a class of stochastic nonlinear feedback systems. 85b:93049
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#### 49-XX CALCULUS OF VARIATIONS AND OPTIMAL CONTROL; OPTIMIZATION [See also 34H05, 65Kxx, 90Cxx, 93-XX.]

- Hu, Hai Chang Effects of small variations of parameters on eigenvalues. (Chinese) (Not in MR)

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- (Hoffmann, Karl-Heinz) See Optimal control of partial differential equations. 85g:49001
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#### 49-00 Handbooks, dictionaries, and other reference works

##### secondary classifications (49-00)

- (Hersch, Joseph) See Pólya, George, 85m:01108a
- Pólya, George \* Collected papers. Vol. III. 85m:01108a

- (Reynolds, M. C.) See Pólya, George, 85m:01108a

- (Rota, Gian-Carlo) See Pólya, George, 85m:01108a

- (Shortt, Rae Michael) See Pólya, George, 85m:01108a

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- Blanchard, Ph. (with Brüning, E.) \* Direkte Methoden der Variationsrechnung. (German) [Direct methods of the calculus of variations] 85a:49001

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- Kiselev, A. I. See Krasnov, M. L.; et al., 85h:49001

- Krasnov, M. L. (with Makarenko, G. I.; Kiselev, A. I.) \* Problems and exercises in the calculus of variations. 85h:49001

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- Naumenko, K. I. \* Наблюдение и управление движением динамических систем. (Russian) [Observation and control of the motion of dynamical systems] 85h:49002

- Polyak, B. T. \* Введение в оптимизацию. (Russian) [Introduction to optimization] 85a:49002

- van Tiel, Jan \* Convex analysis. 85m:49001

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- Crandall, Stephen H. \* Engineering analysis. 85m:65001

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- Wang, Yong Chu \* Zui jia kongzhi xitong sheji jichu. (Chinese) [Foundations of the design of optimal control systems] (Not in MR)

#### 49-02 Advanced exposition (research surveys, monographs, etc.)

- Aubin, Jean-Pierre \* Explicit methods of optimization. 85f:49001

- Bublik, B. N. Methods of modeling and optimization of control systems developed in the Department of Cybernetics. (Russian) 85k:49001

- Butkovskii, A. G. Survey of new trends, ideas, and results in control of distributed parameter systems. 85e:49001

- (Charles, Anne-Marie) See Aubin, Jean-Pierre, 85f:49001

- Clarke, Frank H. \* Optimization and nonsmooth analysis. 85m:49002

- Conti, R. Control in minimum time. (Italian) 85b:49001

- Fletcher, Roger Penalty functions. 85a:49003

- Fortin, Michel (with Glowinski, Roland) \* Augmented Lagrangian methods. 85a:49004

- Glowinski, Roland See Fortin, Michel, 85a:49004

- Gorokhovik, V. V. High-order necessary optimality conditions for control problems with terminal constraints. 85a:49005

- (Hunt, B.) See Fortin, Michel, 85a:49004

- Johnson, Gerald W. (with Skoug, D. L.) Control systems and foliation theory. (Russian) 85a:49006

- Koble, H. M. See Sorenson, H. W., 85m:49003

- Lions, Jacques-Louis On the optimal control of unstable distributed systems. 85k:49001

- Mossino, Jacqueline \* Inégalités isopérimétriques et applications en physique. (French) [Isoperimetric inequalities and applications to physics] 85k:49002

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Trussdell, C. The influence of elasticity on analysis: the classic heritage. 85f:01004

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Coppin, C. (with Greenspan, D.) Discrete modeling of minimal surfaces. 85b:49002

Greenspan, D. See Coppin, C., 85b:49002

Kalaba, Robert (with Spingarn, K.) Automatic solution of optimal-control problems. I. Simplest problem in the calculus of variations. 85a:49007

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(Meerov, M. V.) See Problems of control of multiply connected systems. 85d:90004

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(Pak, V. E.) See Control and estimation in dynamical systems. 85c:90103

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Control in complex nonlinear systems ★ Управление в сложных нелинейных системах. (Russian) [Control in complex nonlinear systems] 85g:93003

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Schmidt, J. William (with Davis, Robert P.) ★ Foundations of analysis in operations research. 85i:90001

Zaidan, Vera A modified Hamilton-Jacobi approach in the generalized problem of Bolza. 85m:49006

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Di Blasio, Gabriella The linear-quadratic optimal control problem for delay differential equations. (Italian summary) 85g:49006

Falcone, Maurizio (with Matzeu, M.) Optimal stopping for a Cauchy problem without uniqueness. (Russian and Polish summaries) 85f:49006

Fujii, Takao (with Hayashi, Miyako) Structural optimality of linear optimal control. 85c:49002

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- Pappas, G. S. Corrigendum: "An approximation result for normal integrands and applications to relaxed controls theory" [J. Math. Anal. Appl. 93 (1983), no. 1, 132-141; MR 84g:49005]. 85f:49008
- Peng, Shi Ge (with Chen, Zu Hao) The existence problem of optimal control for nonlinear processes. 85h:49006
- Pertsel', V. A. Optimization of systems of differential equations with nonsmooth right-hand sides under conditions of indeterminacy with respect to initial data. (Russian) 85k:49008
- Rodionov, A. M. The method of integro-differential equations in a problem of synthesis of linear optimal systems with lag on an infinite time interval. (Russian) 85m:49005
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- Serdjukov, Yu. P. See Men'shikov, G. G., 85h:49005
- Sharifov, Ya. A. Existence of optimal control for systems with retarded argument. (Russian) 85h:49007
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- Solheim, Ole A. Robustness analysis of a class of optimal control systems. 85f:49009
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- Totani, Takayoshi (with Nonami, Kenzo) A new approach to realize linear optimal control by means of compensation input. 85f:49010
- Ye, Qing Kai The optimal feedback control of linear systems with noncheap control. 85k:49009
- You, Yun Cheng Quadratic unbounded optimal control of second-order systems. (Chinese. English summary) 85h:49008

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- Anderson, Leonard R. (with Brewer, Dennis W.; Baykan, A. Rasim) Numerical solution of the symmetric Riccati equation through Riccati iteration. 85d:65027
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- Balachandran, Krishnan (with Somasundaram, D.) Time optimal control of a second order nonlinear plant. 85i:49012
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- Brewer, Dennis W. See Anderson, Leonard R.; et al., 85d:65027
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- Conti, R. Return sets of a linear control process. 85h:49076
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- Koussioris, Trifon G. Correction to: "A necessary condition for optimization in the frequency domain" [Internat. J. Control 36 (1982), no. 2, 213-215; MR 84a:49025]. 85h:49031
- Kwong, R. H. Characterization of kernel functions associated with operator algebraic Riccati equations for linear delay systems. 85b:49012
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- Aubert, Gilles (with Tahraoui, Rabah) Sur quelques résultats d'existence en optimisation non convexe. (English summary) [Some existence results in nonconvex optimization] 85b:49004
- Buonocore, Pasquale Sur la rigidité à la torsion des domaines doublement connexes. (English summary) [On the torsional rigidity of doubly connected domains] 85e:49003
- Congedo, G. (with Emmer, M.; González, E. H. A.) Rotating drops in a vessel. 85f:49011
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## secondary classifications (49A21)

- Balder, E. J. A unifying note on Fatou's lemma in several dimensions. 85f:28003

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- Abdikerimov, T. Synthesis of optimal control. (Russian) 85k:49010
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- Burkovskaya, V. L. (with Makarov, Vladimir Leonidovich) Applicability of the method of nets and the method of lines to the solution of a class of problems of optimal control theory. (Russian) 85j:49003
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- Zhou, Shu Zi On an axisymmetric free boundary problem. (Chinese. English summary) 85e:73024
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- Ardova, L. V. (with Kamenskii, G. A.) Application of the local variation method to the solution of variational problems with deviating argument. (Russian) 85j:49008
- Barabanov, A. T. Linear-quadratic optimization of functionally complex dynamical systems of Green type. (Russian) 85h:49020
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- Gripenberg, Gustaf The construction of the solution of an optimal control problem described by a Volterra integral equation. 85g:49012
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- Pacella, Filomena (with Tricarico, Mariarosaria) On the existence of infinitely many critical points of the functional  $\int_{\Omega} f(x, u, Du) dx$ . (Italian summary) 85g:49013
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- Chenais, Denise (with Rousselet, Bernard) Différentiation du champ de déplacements dans une arche par rapport à la forme de la surface moyenne en élasticité linéaire. (English summary) [Differentiation of displacement in an arch in relation to the form of the mid-surface in linear elasticity] 85k:73077
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- Granas, A. (with Liu, Feng Ché) Théorèmes du minimax. (English summary) [Minimax theorems] 85i:49016
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- Basilov, Yu. A. Minimax solution of an equation of the first kind. (Russian) 85e:47014
- Berestycki, Henri See Bahri, Abbas, 85g:34041
- Borzenkov, A. V. (with Gabasov, R.) An algorithm for the solution of a special minimax problem. (Russian) 85g:90075
- Bublik, B. N. (with Nakonechnyi, A. G.) Problems of minimax estimation of functionals of solutions and right-hand sides of the equation of bending of plates of variable thickness. (Russian) 85i:73020
- (with Nakonechnyi, A. G.; Chernyak, S. I.) Numerical minimax estimation of functionals defined on states of hyperbolic equations. (Russian) 85j:65023
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- Dunham, Charles B. (with Shi, Ying Guang) Chebyshev approximation by exponential differences. 85e:41024
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- Petrov, L. A. (with Tomskii, G. V.) ★Геометрия простого преследования. (Russian) [Geometry of simple pursuit] 85e:49017
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- Zhang, Si Ying A new approach of solving qualitative differential games and determining the boundary of controllable region. (See 85c:93003)

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- Al'brekht, É. G. (with Mukhtarov, M.) Solution of a hierarchical game by the method of successive approximation. (Russian. Kazakh summary) 85k:90172
- Arutyunov, A. V. The first condition in L. S. Pontryagin's article: "On the theory of differential games" [Uspekhi Mat. Nauk 21 (1966), no. 4(130), 219-274; MR 34 #4033]. (Russian) 85e:90074
- Azamov, A. Investigation of a class of nonlinear differential games. (Russian) 85i:90165
- Forouhar, K. (with Gibson, S. J.; Leonides, C. T.) Singular linear quadratic differential games with bounds on control. 85a:90246
- Gibson, S. J. See Forouhar, K.; et al., 85a:90246
- Leonides, C. T. See Forouhar, K.; et al., 85a:90246
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- Mignanog, F. (with Pieri, G.) On a generalized Bellman equation for the optimal-time problem. 85d:49042
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- (with Wets, Roger J.-B.) A convergence for bivariate functions aimed at the convergence of saddle values. 85e:49030
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- Bali, S. Quelques propriétés topologiques de l'ensemble des solutions d'une équation différentielle multivoque. I. [Some topological properties of the set of solutions of a multivalued differential equation. I] 85m:49023a
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- Perturbations semi-continues inférieurement d'un problème d'évolution. [Lower semicontinuous perturbations of an evolution problem] 85m:49023c
- Bottaro, Gianfranco (with Oppizzi, Pirro) Lower semicontinuity of an integral functional depending on functions with values in a Banach space. (Italian. English summary) 85m:49023
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- Buttazzo, Giuseppe (with Leaci, Antonio) A continuity theorem for operators from  $W^{1,p}(\Omega)$  into  $L^q(\Omega)$ . 85k:49036
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- (with Clauzure, Paulette) Semicontinuité des fonctionnelles intégrales. [Semicontinuity of integral functionals] 85k:49038
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- Cavazzuti, Ennio Some characterizations of multiple  $\Gamma$ -convergence. (Italian. English summary) 85h:49024
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- Bednarszuk, Ewa Duality and stability theorems for convex multivalued constrained minimization problems. (Russian and Polish summaries) 85j:90035
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- Cherkaev, A. V. See Lur'e, K. A.; et al., 85f:73079
- De Giorgi, Ennio (with Buttazzo, Giuseppe) Generalized limits and their applications to differential equations. (Italian) 85f:34027
- (with Marino, Antonio; Tosques, Mario)  $(p, q)$ -convex functions. (Italian. English summary) 85h:49029
- Dontchev, A. L. (with Vel'ov, V. M.) On the behaviour of solutions of linear autonomous differential inclusions at infinity. 85f:34025
- Fedorov, A. V. See Lur'e, K. A.; et al., 85f:73079
- Hardt, Robert M. (with Kinderlehrer, David) Elastic plastic deformation. 85e:73022
- Hirabayashi, Ryuichi See Kojima, Masakazu, 85i:90124
- Isak, Adam Theorems on selectors in topological spaces. I. 85k:54024
- Jouak, Mohamed (with Thibault, Lionel) Equicontinuity of families of convex and concave-convex operators. 85m:47070
- Kinderlehrer, David See Hardt, Robert M., 85e:73022
- Kisilewicz, Michał Controllability of generalized systems. 85k:93012
- Klötzler, Rolf See Rutkauskas, P., 85c:49036
- Knops, R. J. (with Stuart, Charles) Quasiconvexity and uniqueness of equilibrium solutions in nonlinear elasticity. 85j:73012
- Kojima, Masakazu (with Hirabayashi, Ryuichi) Continuous deformation of nonlinear programs. 85i:90124
- Le Dung Muu Stability property of a class of variational inequalities. (German and Russian summaries) 85m:49015
- Levashov, V. A. The structure of subdifferentials. (Russian) 85h:46065
- Lions, Pierre-Louis On the concentration-compactness principle. 85f:49013
- Luque, Fernando Javier Asymptotic convergence analysis of the proximal point algorithm. 85j:90039
- Lur'e, K. A. (with Cherkaev, A. V.; Fedorov, A. V.) On the existence of solutions to some problems of optimal design for bars and plates. 85f:73079
- Marcellini, Paolo Quasiconvex quadratic forms in two dimensions. 85j:26018
- Marino, Antonio See De Giorgi, Ennio; et al., 85h:49029
- Marques, M. D. P. M. Dualité et sous-différentiabilité de fonctionnelles construites au moyen d'un opérateur divergence. [Duality and subdifferentiability of functionals constructed by means of a divergence operator] 85k:46050
- Nania, Luciana On the  $\Gamma$ -convergence for multiple integrals depending on vector valued functions. (Italian summary) 85j:46073
- Nguyễn Xuân Tấn On the continuity of multivalued mappings and the stability of fixed points. 85j:47070
- Oettli, Karl Werner On a new version of the Hahn-Banach theorem. 85j:46012
- Oliva, P. See Caligaris, O., 85b:58033
- Ricceri, Biagio Selections of multifunctions of two variables. 85j:54023
- Rodé, G. (with Simons, Stephen) Variational inequalities for functions on convex sets. 85f:49021
- Rutkauskas, P. (with Klötzler, Rolf) Duality and discrete optimal control problems. (Russian. German and Lithuanian summaries) 85c:49036
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- Stuart, Charles See Knops, R. J., 85j:73012
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- $G$ -convergence of elliptic operators. (Russian) 85i:35049

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- Chen, Guang Ya Closure of effective subdifferential mappings of vector-valued functions. (Chinese) (Not in MR)
- Frankowska, Halina Inclusions adjointes associées aux trajectoires minimales d'inclusions différentielles. (English summary) [Adjoint differential inclusions associated with minimal trajectories of differential inclusions] 85a:49016
- Hamilton, E. P. (with Nashed, M. Zuhair) Variational derivatives and  $p$ -gradients of functionals on spaces of continuously differentiable functions. 85c:49009
- Minchenko, L. I. Conditions for directional differentiability of the maximum function on a point-set mapping. (Russian. English summary) 85h:49025
- Nashed, M. Zuhair See Hamilton, E. P., 85c:49009
- Rodé, G. (with Simons, Stephen) Directional derivatives and variational inequalities. 85f:49029
- Simons, Stephen See Rodé, G., 85f:49029
- Zajíček, Luděk A generalization of an Ekeland-Lebourg theorem and the differentiability of distance functions. 85k:49046

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- Gautier, Serge (with Isac, George; Penot, Jean-Paul) Surjectivity of multifunctions under generalized differentiability assumptions. 85e:58017
- Ioffe, A. D. Subdifferentiability spaces and nonsmooth analysis. 85c:58014
- Isac, George See Gautier, Serge; et al., 85e:58017
- Mirică, Stefan The contingent and the paratingent as generalized derivatives for vector-valued and set-valued mappings. 85a:58011
- Penot, Jean-Paul See Gautier, Serge; et al., 85e:58017
- Pourciau, B. H. Homeomorphisms and generalized derivatives. 85e:26011
- Tan, Kenan On the Gâteaux differentiability of the vector valued convex mappings. 85k:58010
- Thibault, Lionel On generalized differentials and subdifferentials of Lipschitz vector-valued functions. 85e:58020
- Vlach, Milan Closures and neighbourhoods induced by tangential approximations. (See 85h:90003)

## 49A52 Nonsmooth analysis [See also 58Cxx.]

- Borwein, J. M. (with Strójwas, H. M.) Directionally Lipschitzian mappings on Baire spaces. 85m:49028
- Ioffe, A. D. Single-valued representation of set-valued mappings. II. Application to differentiable inclusions. 85b:49017
- Kusraev, A. G. (with Kutateladze, S. S.) Subdifferentials in Boolean-valued models of set theory. (Russian) 85m:49029
- Kutateladze, S. S. See Kusraev, A. G., 85m:49029
- May, H.-O. Nichtdifferenzierbare Funktionen in der analytischen Mechanik. [Nondifferentiable functions in analytical mechanics] 85m:49030
- Michel, Philippe (with Penot, Jean-Paul) Calcul sous-différentiel pour des fonctions lipschitziennes et non lipschitziennes. (English summary) [Subdifferential calculus for Lipschitzian and non-Lipschitzian functions] 85i:49027
- Papageorgiou, Nikolaos S. Nonsmooth analysis on partially ordered vector spaces. II. Nonconvex case, Clarke's theory. 85b:49026
- Penot, Jean-Paul See Michel, Philippe, 85i:49027
- Ricceri, Biagio Carathéodory's selections for multifunctions with nonseparable range. 85f:49030
- Strójwas, H. M. See Borwein, J. M., 85m:49028

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- Attela, M. (with Audounet, J.)  $\inf$ -compact potentials and Banachic kernels. 85g:46027
- Audounet, J. See Attela, M., 85g:46027
- Castaing, Charles Un résultat d'existence de sélection mesurable et compacité forte de l'intégrale d'une multiapplication dans un Banach non nécessairement séparable. [An existence result for measurable selection and strong compactness of the integral of a multifunction in a not necessarily separable Banach space] 85d:28005a
- Un résultat d'existence de sélection mesurable et compacité forte de l'intégrale d'une multiapplication dans un Banach non nécessairement séparable. (English summary) [An existence result for measurable selection and strong compactness of the integral of a multifunction in a not necessarily separable Banach space] 85d:28005b
- Clarke, Frank H. ★ Optimization and nonsmooth analysis. 85m:49002
- Dem'yanov, V. F. Quasidifferentials and nonsmooth optimization problems. 85b:49030
- Fitzpatrick, Simon Differentiation of real-valued functions and continuity of metric projections. 85m:46039
- Hiriart-Urruty, J.-B. Limiting behaviour of the approximate first order and second order directional derivatives for a convex function. 85f:58009
- Extension of Lipschitz integrands and minimization of nonconvex integral functionals. Applications to the optimal recourse problem in discrete time. 85d:49013
- Ioffe, A. D. Subdifferentiability spaces and nonsmooth analysis. 85c:58014
- Calculus of Dini subdifferentials of functions and contingent coderivatives of set-valued maps. 85k:46049
- Kirov, Nikolai K. Generalized monotone mappings and differentiability of vector-valued convex mappings. 85h:46069
- Krein, M. N. Semidifferentiable Fredholm mappings. (Russian) 85b:58013
- Kusraev, A. G. Some rules for calculation of tangent cones. (Russian) 85d:58010
- Nehse, R. Zwei Fortsetzungssätze. [Two extension theorems] 85g:46008
- Nurminski, E. A. Subgradient method for minimizing weakly convex functions and  $\varepsilon$ -subgradient methods of convex optimization. 85f:90099
- Panagiotopoulos, P. D. Nonconvex energy functions. Hemivariational inequalities and substationarity principles. 85f:49020
- Ricceri, Biagio Selections of multifunctions of two variables. 85j:54023
- Rockafellar, R. Tyrrell Favorable classes of Lipschitz-continuous functions in subgradient optimization. 85e:90069
- Generalized subgradients in mathematical programming. 85b:90089

Truffert, A. Intégrandes normales et espérance conditionnelle. II. Existence, unicité, régularité. [Normal integrands and conditional expectation. II. Existence, uniqueness, regularity] 85h:46049

Volle, Michel Convergence en niveaux et en épigraphes. (English summary) [Convergence by epigraph and level set methods] 85h:90135

## 49A55 Duality theory

- Benker, H. (with Dietrich, H.) Anwendung der Dualitätstheorie auf Probleme der optimalen Steuerung. III. (English and Russian summaries) [Application of duality theory to problems of optimal control. III] 85a:49017
- Deumlich, R. (with Elster, K.-H.)  $\Phi$ -conjugation and nonconvex optimization. A survey. I. (German and Russian summaries) 85a:49018
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- Elster, K.-H. See Deumlich, R., 85a:49018
- Jefferson, T. R. See Scott, C. H., 85d:49023
- Kannlappan, P. Fenchel-Rockafellar type duality for a nonconvex nondifferential optimization problem. 85h:49027
- Klötzler, Rolf Dualität bei Steuerungsproblemen und zugeordneten Flußproblemen. I. (English and Russian summaries) [Duality in control problems and associated flow problems. I] 85e:49023a
- Dualität bei Steuerungsproblemen und zugeordneten Flußproblemen. II. (English and Russian summaries) [Duality in control problems and associated flow problems. II] 85e:49023b
- Moreno, Carlos J. Numerical solution of optimal control problems. (Spanish) (See 85h:90011a)
- Scott, C. H. (with Jefferson, T. R.) Generalized geometric programming for functionals. 85d:49022
- Singer, Ivan Optimization by level set methods. I. Duality formulae. 85b:49019
- Conjugate functionals and level sets. 85e:49024
- Strang, Gilbert  $L^1$  and  $L^\infty$  approximation of vector fields in the plane. 85c:49010

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- Bandle, Catherine (with Klötzler, Rolf) A priori Schranken für Eigenwerte von Sturm-Liouvilleschen Eigenwertproblemen. (English summary) [A priori bounds for eigenvalues of Sturm-Liouville eigenvalue problems] 85k:34041
- Bednarsuk, Ewa Duality and stability theorems for convex multivalued constrained minimization problems. (Russian and Polish summaries) 85j:90035
- Castaing, Charles (with Clauzure, Paulette) Semicontinuité des fonctionnelles intégrales. [Semicontinuity of integral functionals] 85k:49038
- Clauzure, Paulette See Castaing, Charles, 85k:49038
- Ekeland, Ivar (with Laury, J.-M.) Duality in nonconvex variational problems. (French summary) 85a:49011
- Gerstewitz, Christiane Nichtkonvexe Dualität in der Vektroptimierung. [Nonconvex duality in vector optimization] 85d:90118
- Hwang, George R. See Lai, Han Ch'ing; et al., 85d:90078
- Klötzler, Rolf See Bandle, Catherine, 85k:34041
- Lai, Han Ch'ing (with Yang, Shu Shih; Hwang, George R.) Duality in mathematical programming of set functions: on Fenchel duality theorem. 85d:90078
- Laury, J.-M. See Ekeland, Ivar, 85a:49011
- Meidan, R. (with Perold, A. F.) Optimality conditions and strong duality in abstract and continuous-time linear programming. 85e:90067
- Murakami, Atsuhiko (with Yamasaki, Maretsugu) Gamonic functionals on a product space. 85d:90119
- Perold, A. F. See Meidan, R., 85e:90067
- Przeworska-Folewicz, D. Conjugate problems for linear systems with right invertible operator. 85k:47021
- Singer, Ivan Optimization by level set methods. III. Characterizations of solutions in the presence of duality. 85j:90074a
- Optimization by level set methods. IV. Generalizations and complements. 85j:90074b
- The lower semicontinuous quasiconvex hull as a normalized second conjugate. 85f:90113
- Surrogate dual problems and surrogate Lagrangians. 85d:49021
- Optimization by level set methods. V. Duality theorems for perturbed optimization problems. (German and Russian summaries) 85j:90074c
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- Yang, Shu Shih See Lai, Han Ch'ing; et al., 85d:90078

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- Allakhverdiev, Dzh. È. (with Bashirov, A. È.) A linear-quadratic problem of stochastic optimal control with dependent random noise. I. (Russian. English and Azerbaijani summaries) 85m:49031a
- (with Bashirov, A. È.) A linear-quadratic problem of stochastic optimal control with dependent random noise. II. (Russian. English and Azerbaijani summaries) 85m:49031b
- Andreev, N. V. Reduced control in a problem of optimization of two-component processes. (Russian. English summary) 85j:49013
- Bashirov, A. È. See Allakhverdiev, Dzh. È., 85m:49031a and 85m:49031b
- Chen, Han Fu Unified controls applicable to the general case under a quadratic index. (Chinese. English summary) 85h:49028
- Christophe, N. (with Helmes, K.) Existence of optimal controls for partially observed linear diffusions. 85g:49018
- Facchinetti, Gisella (with Russo, L.) A one-dimensional case of stochastic homogenization. (Italian. English summary) 85f:49031
- Fleming, W. H. (with Nisio, M.) On stochastic relaxed control for partially observed diffusions. 85m:49032



- Helmes, K. See Christopeit, N., 85g:49018  
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 Menaldi, J.-L. (with Robin, M.) Some singular control problem with long term average criterion. 85k:49048  
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 Errata: "Stationary stochastic asymmetric control" [Internat. J. Control 37 (1983), no. 6, 1287-1289; MR 85a:49021]. 85k:49049

## secondary classifications (49A60)

- Barbu, Viorel (with Da Prato, G.) Solution of the Bellman equation associated with an infinite-dimensional stochastic control problem and synthesis of optimal control. 85b:49045  
 Capuzzo Dolcetta, I. (with Matzeu, M.; Menaldi, J.-L.) On a system of first-order quasivariational inequalities connected with the optimal switching problem. 85b:49047  
 Da Prato, G. See Barbu, Viorel, 85b:49045  
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 Glasko, V. B. (with Kriksin, Yu. A.) Some stochastically regularizing algorithms based on a difference representation of a quasioptimal measure. (Russian) 85k:49085  
 Karatas, Ioannis (with Shreve, S. E.) Trivariate density of Brownian motion, its local and occupation times, with application to stochastic control. 85k:60113  
 Kolodit, A. M. Controllable random processes depending on an unknown parameter. (Russian) 85b:93050  
 Kriksin, Yu. A. See Glasko, V. B., 85k:49085  
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 Stettner, Lukasz On impulsive control with long run average cost criterion. 85f:93081  
 Yavin, Y. Computation of suboptimal randomized strategies for steering the random motion of a point under partial observation. 85j:93075

## 49A99 None of the above, but in this section

- Anuchin, V. F. See Batilichev, D. I. (Not in MR)  
 Batilichev, D. I. (with Anuchin, V. F.) Estimation of the importance of particular criteria of optimality according to the principle of guaranteed result. (Russian) (Not in MR)  
 De Giorgi, Ennio (with Marino, Antonio; Tosques, Mario)  $(p, q)$ -convex functions. (Italian. English summary) 85b:49029  
 Deng, Ju Long The optimal fuzzy control of minimal information. (Chinese. English summary) 85b:49030  
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 Dzemys, Gintautas Investigation of the structural analysis method of optimization problems and its application in local optimization. (Russian. English and Lithuanian summaries) (Not in MR)  
 See also Šaltenis, Vydyūnas, (Not in MR)  
 Lions, Pierre-Louis Applications de la méthode de concentration-compacité à l'existence de fonctions extrémales. (English summary) [Applications of the concentration-compactness method to the existence of the extremal functions] 85b:49023  
 Marino, Antonio See De Giorgi, Ennio; et al., 85b:49029  
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 Tadmudse, T. A. Existence theorems for solutions of optimal problems with variable delays. (Russian and Polish summaries) 85g:49020  
 Existence of a solution in optimal problems containing incommensurate delays in the control. (Russian. English summary) 85g:49021  
 Tonti, E. Variational formulation for every nonlinear problem. (Not in MR)  
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- Agranovich, G. A. See Barabanov, A. T., 85k:93034  
 Anselotti, Gabriele Pairings between measures and bounded functions and compensated compactness. 85m:46042  
 Barabanov, A. T. (with Agranovich, G. A.) Linear models and optimization of continuous-discrete dynamic systems. (Russian) 85k:93034

- Batukhtin, V. D. (with Malboroda, L. A.) Toward a theory of extremal problems. 85d:49001  
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 Malboroda, L. A. See Batukhtin, V. D., 85d:49001  
 Mignanago, F. (with Pieri, G.) On a generalized Bellman equation for the optimal-time problem. 85d:49042  
 Pieri, G. See Mignanago, F., 85d:49042

## 49Bxx Necessary conditions and sufficient conditions for optimality

## secondary classifications (49Bxx)

- Conti, R. Control in minimum time. (Italian) 85b:49001  
 49B05 Free problems in one independent variable  
 Bedel'baev, A. A. The Carathéodory method in a problem of optimal control. (Russian) 85e:49025  
 Charalambous, C. On conditions for optimality of a class of nondifferentiable functions. 85e:49011  
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 Anculaescl, Gheorghe Synthesis of optimal bilinear controls. 85m:49033  
 Arsenashvili, A. I. An optimal control problem for systems with variable structure in the presence of delay in the phase coordinates. (Russian. English summary) 85g:49022  
 Arutyunov, A. V. (with Tynyanski, N. T.) On necessary conditions for a local minimum in optimal control theory. (Russian) 85m:49034  
 Ashchepkov, L. T. Optimization of sliding motions in a discontinuous system. 85k:49050  
 Avalishvili, N. M. The maximum principle for a class of optimal problems with variable structure in the presence of delays in the phase coordinates and in the control. (Russian. English summary) (Not in MR)  
 Bakht, Aleksandar A remark on Hamilton's principle as a problem of optimal control. (Serbo-Croatian. Russian summary) 85k:49051  
 Barbashina, E. E. A package with variable control variations. I. (Russian) 85m:49035  
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 Clarke, Frank H. (with Vinter, R. B.) Local optimality conditions and Lipschitzian solutions to the Hamilton-Jacobi equation. 85e:49013  
 Das, Prabir (with Patel, N. K.; Prabhu, Srinivasa Sridhara) Determination of the optimal initial function and the parameters in a system described by delay-differential equations. 85b:49032  
 Dankas, V. The dual correction method for the initial support control in the problem of optimization of linear dynamic systems. (Russian. English and Lithuanian summaries) 85i:49028  
 Delfour, M. C. Linear optimal control of systems with state and control variable delays. 85b:49024  
 Dmitruk, A. V. Quadratic conditions for the Pontryagin minimum in an optimal control problem that is linear with respect to control, with a constraint on the control. (Russian) 85b:49033  
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- Frankowska, Halina The first order necessary conditions for nonsmooth variational and control problems. 85f:49032  
 Fricke, A. Ein isoperimetrisches Problem im  $R^3$ . (English and Russian summaries) [An isoperimetric problem in  $R^3$ ] 85e:49013  
 Fujii, Takao (with Narazaki, Masaru) A complete optimality condition in the inverse problem of optimal control. 85e:49026  
 Gasanov, K. K. (with Yusubov, Sh. Sh.) Necessary conditions for optimality of singular processes in systems with retarded argument. (Russian) 85k:49052  
 Gilbert, Elmer G. (with Bernstein, Dennis S.) Second-order necessary conditions in optimal control: accessory problem results without normality conditions. 85e:49027  
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 (with Sethi, S. P.) Optimal control of a class of systems with continuous lags: dynamic programming approach and economic interpretations. 85g:49024  
 Hautus, M. L. J. (with Silverman, L. M.) System structure and singular control. 85e:49028  
 Ivanilov, Yu. P. Applicability of methods of analytical mechanics in optimal control. 85b:49035  
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 Kampowsky, W. Optimalitätsbedingungen für Prozesse in Evolutionsgleichungen n-ter Ordnung. (English and Russian summaries) [Optimality conditions for processes in evolution equations of nth order] 85j:49014

- Kando, Hisashi (with Iwazumi, Tetsuo) Sub-optimal control of discrete regulator problems via time-scale decomposition. **85a:49023**
- Kao, Tien Guin' (with Pichugin, E. D.) Optimal variable-structured systems for second-order objects. **85k:49053**
- Keis, I. The linear lumping method in suboptimal control synthesis. (Russian. English and Estonian summaries) **85k:49054**
- Kilmer, W. (with Kroll, W.) Riccati equation solution for controllers with continuous delays. **85e:49029**
- Kokotović, P. V. Perturbations singulières en contrôle optimal. [Singular perturbations in optimal control theory] **85k:49055**
- Kolokol'nikova, G. A. Existence of Krotov's function in a degenerate variational problem. (Russian) **85k:49056**
- Kroll, W. See Kilmer, W. **85e:49029**
- Kukushkin, A. P. Optimal trajectories in a potential field. (Russian) **85d:49026**
- Kurina, G. A. Sufficient conditions for optimality of control for linear systems that are not solved with respect to the derivative. (Russian) **85g:49025**
- Kutepov, S. A. (with Yakovenko, G. N.) Group-theoretic aspects of optimal control. (Russian) **85a:49024**
- Lamabhi-Lagarigue, Françoise Un contre-exemple à une conjecture dans la classe des problèmes de commande optimale singulière. (English summary) [A counterexample to a conjecture in the class of singular optimal control problems] **85e:49030**
- Mansimov, K. B. A control problem with nontypical performance index. I. (Russian) **85m:49036**
- Optimality of singular points of control in Goursat-Darboux systems. (Russian. English and Azerbaijani summaries) **85f:49033**
- Marinich, A. P. (with Rodumta, Kolna) The geometric criterion of local  $\varepsilon$ -controllability of linear autonomous systems. (Russian) **85i:49029**
- Mbsey, Peter N. O. Time optimal control of infinite-dimensional systems. **85a:49025**
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- Muselli, Elena Deparametrization method applied to delay control problems. (Italian. English summary) **85k:49057**
- Narasaki, Masaru See Fujii, Takao. **85e:49026**
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- Khachatryan, R. A. See Pabenichnyi, B. N., 85m:49012
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- Farias, J. Ronald (with Negri, Luiz J.) Another demonstration of the theorem by Hojman and Harleston. 85c:49035
- Hojman, Sergio The inverse problem of the calculus of variations. (See 85b:83001)
- Klötzer, Rolf See Rutikaukas, P., 85c:49036
- Lenhart, Susanne M. Semilinear approximation technique for max-min type Hamilton-Jacobi equations over finite max-min index set. 85c:49047
- Lions, Pierre-Louis On the Hamilton-Jacobi-Bellman equations. 85b:49048
- Negri, Luiz J. See Farias, J. Ronald, 85c:49035
- Rutikaukas, P. (with Klötzer, Rolf) Duality and discrete optimal control problems. (Russian. German and Lithuanian summaries) 85c:49036
- Zambirli, J.-C. Maupertuis' principle of least action in stochastic calculus of variations. 85j:49022
- Zeidan, Vera A modified Hamilton-Jacobi approach in the generalized problem of Bolza. 85m:49056

#### secondary classifications (49C99)

- Barbashov, B. M. (with Nesterenko, V. V.) Continuous symmetries in field theory. 85a:59087
- Bunge, Marta (with Heggie, Murray) Synthetic calculus of variations. 85m:18004
- Capurro, M. A general field theory of Cauchy continuum: classical mechanics. 85a:73010
- Charap, J. M. (with Nelson, J. E.) Surface integrals and the gravitational action. 85b:83031
- Dodonov, V. V. (with Man'ko, V. I.; Skarzhinskii, V. D.) Ambiguities of variational description of classical systems and the quantization problem. (Russian) 85f:81031
- Heggie, Murray See Bunge, Marta, 85m:18004
- Man'ko, V. I. See Dodonov, V. V.; et al., 85f:81031
- Nelson, J. E. See Charap, J. M., 85b:83031
- Nesterenko, V. V. See Babashov, B. M., 85a:59087
- von Rietz, J. The Hamilton-Jacobi theory of De Donder and Weyl applied to some relativistic field theories. 85d:81145
- Skarzhinskii, V. D. See Dodonov, V. V.; et al., 85f:81031

#### 49Dxx Methods of successive approximations (For discrete problems, see 90Cxx; see also 65Kxx.)

- Gabasov, R. (with Kirillova, F. M.) New algorithms and results of numerical experiments for solution of mathematical programming and optimal control problems. 85i:49048
- Kirillova, F. M. See Gabasov, R., 85i:49048

#### 49D05 Methods based on necessary conditions

- Banks, S. P. (with Moussavi-Khalikhal, S. A.) On optimal control of plasma confinement. 85b:49049
- Fan, Quan Xin See Xu, Li Zhi, 85c:49038
- Fel'dman, I. N. See Krotov, V. F., 85c:49037
- Gabasov, R. (with Gnevko, S. V.; Kirillova, F. M.) Direct accurate algorithm for design of optimum control in a linear problem. 85b:49058
- Gnevko, S. V. See Gabasov, R.; et al., 85b:49058
- Gyurkovics, Éva A numerical method for solving linear time-optimal control problems with a given accuracy. (Russian. English summary) 85i:49049a
- (with Vörös, T.) On a method of numerical solution of linear time-optimal control problems with a given accuracy. (Russian. English summary) 85i:49049b
- Kirillova, F. M. See Gabasov, R.; et al., 85b:49058
- Konstantinova, T. V. See Vasil'ev, F. P., 85b:49050
- Krotov, V. F. (with Fel'dman, I. N.) An iterative method for solving optimal control problems. 85c:49037
- Moussavi-Khalikhal, S. A. See Banks, S. P., 85b:49049
- Raitums, U. See Vutsan, Ya. P., 85c:49048b
- Vasil'ev, F. P. (with Konstantinova, T. V.) A generalization of the loaded functional method. (Russian) 85b:49050
- Vlasova, Z. A. A difference scheme of a second order of approximation for a nonlinear one-dimensional variational problem depending on the second derivative. (Russian) 85j:49023
- Vörös, T. See Gyurkovics, Éva, 85i:49049b
- Vutsan, Ya. P. (with Raitums, U.) On the numerical solution of optimal control problems for linear elliptic equations. (Russian) 85c:49048b
- Xu, Li Zhi (with Fan, Quan Xin) On a minimization problem of a triple drag integral. (Chinese. English summary) 85c:49038

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- Buttazzo, Giuseppe (with Dal Maso, Gianni)  $\Gamma$ -convergence and optimal control problems. 85b:49041
- Ch'en, Chün Hsiung See Cheng, Shih K'ang, 85b:78005
- Cheng, Shih K'ang (with Ch'en, Chün Hsiung) On variational electromagnetics: theory and application. 85b:78005
- Dal Maso, Gianni See Buttazzo, Giuseppe, 85b:49041
- Lions, Pierre-Louis Applications de la méthode de concentration-compacité à l'existence de fonctions extrémales. (English summary) [Applications of the concentration-compactness method to the existence of the extremal functions] 85b:49023
- Sivellina, T. I. Minimization of a type of quasidifferential function. (Russian. English summary) 85a:90200
- Yuan, Ya Xiang An example of only linear convergence of trust region algorithms for nonsmooth optimization. 85i:85080

#### 49D07 Gradient methods

- Abasov, T. M. Dual gradient method of solution of minimax problems. (Russian) 85h:49059
- Ashogin, V. V. (with Romanenko, V. D.; Nechipurenko, A. V.) Application of the gradient method for optimal control of a class of distributed nonlinear systems. (Russian) 85b:49051
- Bashenov, V. A. (with Gulyaev, V. I.; Markovskaya, E. O.) Optimal control of nonlinear mechanical systems. (Russian) 85f:49047
- Chang, Ryong Söp On the C-stochastic over-half-gradient method and its convergence. (Korean. English summary) (Not in MR)
- Ciegis, Raimondas On the question of the convergence of the method of two-stage gradient descent. (Russian. English and Lithuanian summaries) 85f:49048
- Corradi, G. On the convergence of conjugate gradient methods. (Italian. English summary) 85i:49050
- Darves-Bornos, J. M. (with Lions, Pierre-Louis; Motet, G.) An optimal control problem in ultracentrifugation. 85m:49057
- Dolidze, Z. O. Convergence of an analogue of the gradient method. (Russian) 85b:49060
- Dunn, J. C. (with Sachs, Ekkehard) The effect of perturbations on the convergence rates of optimization algorithms. 85c:49049
- Fei, Jing Gao A gradient algorithm with restrictive operator in the solution of optimal control problems. (Chinese. English summary) (Not in MR)
- Finch, J. W. See Jones, D. I., 85m:49059
- Gaviano, M. (with Testa, Franco) A general convergence theorem for the reduced gradient method. 85c:49039
- Gopal, M. (with Nair, P. Pratapachandran) Sensitivity reduced optimal linear regulator with prescribed closed-loop eigenvalues. 85m:49058
- Gui, Xiang Yun See Wu, Fang, 85c:49050
- Gulyaev, V. I. See Bashenov, V. A.; et al., 85f:49047
- Jones, D. I. (with Finch, J. W.) Comparison of optimization algorithms. 85m:49059
- Kannan, Rangachary Convergence of iterative processes in nonlinear optimization. 85b:49052
- Lions, Pierre-Louis See Darves-Bornos, J. M.; et al., 85m:49057
- Lyashko, S. I. (with Man'kovskii, A. A.) ★Градиентные методы в задачах оптимального импульсного управления для систем с распределенными параметрами. (Russian) [Gradient methods in problems of optimal impulse control for systems with distributed parameters] 85d:49039
- Man'kovskii, A. A. See Lyashko, S. I., 85d:49039
- Markovskaya, E. O. See Bashenov, V. A.; et al., 85f:49047
- McDowell, D. G. Generalized conjugate directions for unconstrained function minimization. 85d:49040
- Motet, G. See Darves-Bornos, J. M.; et al., 85m:49057
- Nair, P. Pratapachandran See Gopal, M., 85m:49058
- Nechipurenko, A. V. See Ashogin, V. V.; et al., 85b:49051

- Polyak, B. T. (with Tsypkin, Ya. Z.) Optimal algorithms for criterial optimization under conditions of uncertainty. (Russian) 85c:49040
- Powell, M. J. D. Nonconvex minimization calculations and the conjugate gradient method. 85g:49035
- Romanenko, V. D. See Ashogin, V. V.; et al., 85b:49051
- Sachs, Ekkehard See Dunn, J. C., 85e:49049
- Schmidt, Rüdiger ★ Advances in nonlinear parameter optimization. 85a:49037
- Schulze, Ralf Konvergenzgeschwindigkeit des Zoutendijkschen Gradientenverfahrens. (English and Russian summaries) [Rate of convergence of Zoutendijk's gradient method] 85h:49061
- Storey, Colin See Tasopoulos, A., 85f:49049; 85f:49050 and 85f:49051
- Sukhinin, M. F. Two variants of the gradient method. (Russian) 85i:49051
- Tasopoulos, A. (with Storey, Colin) Use of a nonquadratic model in a conjugate-gradient method of optimization with inexact line searches. 85f:49049
- (with Storey, Colin) A conjugate-direction method based on a nonquadratic model. 85f:49050
- (with Storey, Colin) A variable-metric method using a nonquadratic model. 85f:49051
- Teo, K. L. Convergence of a conditional gradient algorithm for relaxed controls involving first boundary value problems of parabolic type. 85i:49052
- Testa, Franco See Gaviano, M., 85c:49039
- Tsypkin, Ya. Z. See Polyak, B. T., 85c:49040
- Vasil'ev, F. P. Iterative regularization of difference approximations of an optimal control problem. (Russian) 85i:49053
- Wang, Chang Yu On the convergence of an improved reduced gradient method. (Chinese) (Not in MR)
- Wu, Fang (with Gui, Xiang Yun) A class of variable metric algorithms with  $n + 1$  independent parameters. 85e:49050
- Yakin, M. Zafer On a space extension algorithm for nondifferentiable optimization. 85j:49024
- Zhao, Qing Zhen Convergence and rate of convergence of an improved supermemory gradient method. (Chinese. English summary) 85e:49051
- Zolésio, J.-P. Les dérivées par rapport aux nœuds des triangularisations et leurs utilisations en identification des domaines. [Derivatives with respect to triangulation nodes and their uses in domain identification] 85h:49062
- secondary classifications (49D07)
- Buckley, A. Termination and equivalence results for conjugate gradient algorithms. 85i:90114
- Falcone, Maurizio (with Siconolfi, A.) Maximum descent monotone solutions of an ordinary differential equation with a discontinuous right-hand side. 85b:90034
- Kaniovskii, Yu. M. A stochastic analogue of the conjugate gradient method with a fixed step. (Russian) 85c:93127
- Kim, Ho A formula for the gradient of the solution of a finite difference equation and its application to an optimization problem. (Korean. English summary) 85a:39001
- Schneiderheine, Wolfgang Extension of unconstrained minimization methods to linearly constrained problems. (German and Russian summaries) 85e:90047
- Schulz, Konrad A note on the convergence of subgradient optimization methods. (German and Russian summaries) 85a:90198
- Siconolfi, A. See Falcone, Maurizio, 85b:90034

## 49D10 Methods of steepest descent type

- Dmitriev, M. G. Iterative solution of optimal control problems with fast and slow motions. (Russian) 85b:49053
- Glasko, V. B. (with Zakharov, A. V.; Il'in, M. E.; Poveshchenko, Yu. A.; Tikhonov, A. N.) Some problems of optimization of quasuniform heating of large-scale components. (Russian) 85e:49052
- Il'in, M. E. See Glasko, V. B.; et al., 85e:49052
- Kalashnikov, V. V. A method of minimization of ravine functions by distinguishing singular directions. (Russian) 85a:49038
- Kozlov, S. S. (with Sazonova, T. V.) A dynamic method of minimization. (Russian) 85f:49052
- Nazareth, Larry An alternative variational principle for variable metric updating. 85f:49053
- Neuberger, John W. Use of steepest descent for the systems of conservation equations. 85i:49060
- Ogawa, T. See Tanino, Tetsuzoh, 85c:49041
- Palanisamy, K. R. (with Prasada Rao, Ganti) Minimum energy control of time-delay systems via Walsh functions. 85b:49054
- Poveshchenko, Yu. A. See Glasko, V. B.; et al., 85e:49052
- Prasada Rao, Ganti See Palanisamy, K. R., 85b:49054
- Sazonova, T. V. See Kozlov, S. S., 85f:49052
- Steihaug, Trond Local and superlinear convergence for truncated iterated projections methods. 85a:49039
- Sun, Wen Yu Numerical treatment of linear dependence in quasi-Newton methods. (Chinese. English summary) 85h:49063
- Tanino, Tetsuzoh (with Ogawa, T.) An algorithm for solving two-level convex optimization problems. 85c:49041
- Tikhonov, A. N. See Glasko, V. B.; et al., 85e:49052
- Tret'yakov, A. A. Two schemes of the nonlinear optimization method in extremal problems. (Russian) 85k:49076
- Zakharov, A. V. See Glasko, V. B.; et al., 85e:49052

## secondary classifications (49D10)

- Blick, E. F. (with Stein, P. D.) Variational solution for pulsatile flow in rigid tubes. (See 85g:93006)
- Burrows, B. L. (with Core, P. W.) Complementary variational principles and variational-iterative principles with geometrical interpretations. 85d:49044

- Charnes, A. (with Kortanek, K. O.; Lovegren, V.) A saddle value characterization of Fan's equilibrium points. 85d:90084
- Ciegla, Raimondas On the question of the convergence of the method of two-stage gradient descent. (Russian. English and Lithuanian summaries) 85f:49048
- Core, P. W. See Burrows, B. L., 85d:49044
- Grossmann, C. (with Vanselow, C.) Ein überlinear konvergentes Verfahren mit modifizierten Lagrangefunktionen. (English and Russian summaries) [A superlinearly convergent method with modified Lagrangian] 85i:90120
- Hasen, G. B. (with Morin, T. L.) Steepest ascent algorithms for nonconical multiple objective programming. 85h:90117
- Kortanek, K. O. See Charnes, A.; et al., 85d:90084
- Leonov, A. S. Solution of linear ill-posed problems on the basis of a modified quasioptimality criterion. (Russian) 85d:85038
- Lovegren, V. See Charnes, A.; et al., 85d:90084
- Morin, T. L. See Hasen, G. B., 85h:90117
- Schneiderheine, Wolfgang Projektionskompatible Verfahren der freien Minimierung und ihre Anwendung auf linear restringierte Probleme. I. Theorie. [Projection-compatible methods of free minimization and their application to linear constrained problems. I. Theory] 85i:90129
- Stein, P. D. See Blick, E. F., (85g:93006)
- Vanselow, C. See Grossmann, C., 85i:90120

## 49D15 Methods of Newton-Raphson, Galerkin and Ritz types

- Adshubel, L. T. Construction of optimal regulators for the biharmonic equation. (Russian) 85i:49054
- Feinstein, C. D. (with Oren, S. S.) A Newton-type algorithm for the solution of the implicit programming problem. 85k:49077
- Fernández Cara, Enrique Numerical approximation of an optimal design problem in the aerodynamics of continuous media. (Spanish) (See 85i:90012)
- Gu, Yong Geng Strong nonlinear variational problems with natural boundary value conditions. 85i:49055
- Lasiecka, I. Ritz-Galerkin approximation of the time optimal boundary control problem for parabolic systems with Dirichlet boundary conditions. 85m:49061
- Müller, A. M. K. Ein Beitrag zur numerischen Realisierung von Minimierungsverfahren. [A contribution to the numerical realization of minimization methods] (Not in MR)
- Oren, S. S. See Feinstein, C. D., 85k:49077
- Rosen, I. Gary Difference equation state approximations for nonlinear hereditary control problems. 85h:49064
- Sachs, Ekkehard Newton's method for singular constrained optimization problems. 85h:49065
- Sinha, Sunil Kumar A mathematical technique to optimize a mechanical design with many parameters. (See 85g:93006)

## secondary classifications (49D15)

- Bol'tsova, I. A. See Marchenko, V. P., 85k:70025
- Davis, J. H. (with Dickinson, R. G.) Spectral factorization by optimal gain iteration. 85g:93082
- Dennis, John E., Jr. (with Schnabel, R. B.) ★ Numerical methods for unconstrained optimization and nonlinear equations. 85j:65001
- Dickinson, R. G. See Davis, J. H., 85g:93082
- Fernández Cara, Enrique On the numerical approximation of a geometric control problem. (Spanish. English summary) 85a:76007
- Fręckiewicz, Henryk (with Legat, Adam) ★ Geometryczna zmiennosc powlok siatkowych. (Polish) [Geometric variability of multi-segmental surface structures] 85c:73060
- Goldstein, C. I. The solution of exterior interface problems using a variational method with Lagrange multipliers. 85g:65117
- Grandinetti, L. Some investigations in a new algorithm for nonlinear optimization based on conic models of the objective function. 85i:90119
- Guo, You Zhong Variational methods in solid state mechanics. (Chinese. English summary) 85f:73026
- Haslinger, Jaroslav See Hlaváček, Ivan; et al., 85k:49023
- Hlaváček, Ivan (with Haslinger, Jaroslav; Nečas, Jindřich; Lovisek, J.) ★ Rístenie variacných nerovností v mechanike. (Slovak) [Solution to variational inequalities in mechanics] 85k:49023
- Huang, Ai Xiang See Li, Kai Tai; et al., 85i:49055
- Kalaba, Robert (with Spingarn, K.) Automatic solution of optimal-control problems. I. Simplest problem in the calculus of variations. 85a:49007
- Legat, Adam See Fręckiewicz, Henryk, 85c:73060
- Li, Du See Li, Kai Tai; et al., 85i:49055
- Li, Kai Tai (with Huang, Ai Xiang; Ma, Yi Chen; Li, Du; Liu, Zhi Xing) Optimal control finite element approximation for penalty variational formulation of three-dimensional Navier-Stokes problem. 85i:49058
- Liu, Zhi Xing See Li, Kai Tai; et al., 85i:49055
- Lovisek, J. See Hlaváček, Ivan; et al., 85k:49023
- Luchka, A. Yu. The variational-iterative method. (Russian) 85h:85124
- Ma, Yi Chen See Li, Kai Tai; et al., 85i:49055
- Marchenko, V. P. (with Bol'tsova, I. A.) Numerical solution of an averaged problem of the dynamics of a controllable rigid body. (Russian) 85k:70025
- Nakazawa, S. See Zienkiewicz, O. C., 85m:73036
- Nečas, Jindřich See Hlaváček, Ivan; et al., 85k:49023
- Schnabel, R. B. See Dennis, John E., Jr., 85j:65001
- Spingarn, K. See Kalaba, Robert, 85a:49007
- Westbrook, D. R. A mixed variational inequality boundary iteration method for some free boundary problems. 85c:65148
- Wong, Wing Hung On constrained multivariate splines and their approximations. 85d:41018
- Zienkiewicz, O. C. (with Nakazawa, S.) On variational formulation and its modifications for numerical solution. 85m:73036

## 49D20 Methods of relaxation type

- Eydeland, Alexander A method of solving nonlinear variational problems by nonlinear transformation of the objective functional. I. **85b:49086**
- Glen, D. (with Lang, Bernard Albert; Miellou, J.-C.; Raffort, L.; Spiteri, P.) Commande optimale de systèmes complexes. (English summary) [Optimal control of complex systems] (Not in MR)
- Lang, Bernard Albert See Glen, D.; et al. (Not in MR)
- Miellou, J.-C. See Glen, D.; et al. (Not in MR)
- Outrata, J. V. On a class of nonsmooth optimal control problems. **85c:49042**
- Raffort, L. See Glen, D.; et al. (Not in MR)
- Spiteri, P. See Glen, D.; et al. (Not in MR)

## secondary classifications (49D20)

- Acerbi, Emilio (with Buttazzo, Giuseppe; Fusco, Nicola) Semicontinuity and relaxation for integrals depending on vector valued functions. **85i:49019**  
(with Fusco, Nicola) Semicontinuity problems in the calculus of variations. **85m:49021**
- Buttazzo, Giuseppe See Acerbi, Emilio; et al. **85i:49019**
- Fusco, Nicola See Acerbi, Emilio; et al. **85i:49019** and **85m:49021**
- Nannu, R. V. The method of pointwise relaxation in the problem of elastoplastic torsion of a cylindrical rod. (Russian) **85g:73014**

## 49D25 Finite difference methods

- Glowinski, Roland Numerical methods for the time dependent Navier-Stokes equations for incompressible viscous fluids. (See **85g:65010**)
- Hackbusch, W. (with Will, Th.) A numerical method for a parabolic bang-bang problem. **85k:49078**
- Hartwig, Karl-Heinz Differenzenapproximation von elliptischen Variationsungleichungen mit Beschränkungen im Gebiet und auf dem Rand. [Finite difference approximation of elliptic variational inequalities with constraints in the domain and on the boundary] **85h:49067**
- Kozlov, V. D. (with Zhelyazkov, Zh. M.) An algorithm and software for synthesis of the optimal structure of a linear discrete control system. (Russian) (Not in MR)
- Miranshavlili, M. G. The method of local variations for a functional. (Russian) **85h:49068**
- Noor, Muhammad Aslam Finite element analysis of a class of contact problems. **85k:49079**
- Potapov, M. M. Approximation of optimization problems with smooth admissible controls in the presence of constraints. (Russian) **85b:49055**
- Samoylovskii, A. I. (with Sushkov, B. G.) Structure and dynamics of an optimal control system. **85g:49034**
- Song, Ch'ang Ho Approximation of a parabolic variational inequality of the second kind. (Korean. English summary) **85f:49054**  
Approximation of a hyperbolic variational inequality. (Korean. English summary) **85g:49037**
- Sushkov, B. G. See Samoylovskii, A. I. **85g:49034**
- Will, Th. See Hackbusch, W. **85k:49078**
- Yas, Engin A suboptimal terminal controller for linear discrete-time systems. **85h:49069**
- Zhelyazkov, Zh. M. See Kozlov, V. D. (Not in MR)

## secondary classifications (49D25)

- Cherkasik, B. V. See Kim, K. V.; et al. **85h:90103**
- Gasilov, V. A. (with Golovizin, V. M.; Sorokovikova, O. S.) The variational approach to the construction of discrete mathematical models of gas dynamics in mixed Euler-Lagrange variables. (Russian) **85f:78068**
- Golovizin, V. M. See Gasilov, V. A.; et al. **85f:78068**
- Ishmukhametov, A. Z. Difference approximation of a problem of optimal control of transverse vibrations of a rod. (Russian) **85f:65102**
- Kim, Ho A formula for the gradient of the solution of a finite difference equation and its application to an optimization problem. (Korean. English summary) **85a:39001**
- Kim, K. V. (with Nesterov, Yu. E.; Shokov, V. A.; Cherkasik, B. V.) An efficient algorithm for calculating derivatives, and extremal problems. (Russian) **85h:90103**
- Mitshakina, Yu. V. Extremal control of plants with a threshold performance criterion. **85f:93024**
- Nesterov, Yu. E. See Kim, K. V.; et al. **85h:90103**
- Petrov, I. I. Optimal heating with two control actions and final observation. (Bulgarian. English and Russian summaries) (Not in MR)
- Shokov, V. A. See Kim, K. V.; et al. **85h:90103**
- Sorokovikova, O. S. See Gasilov, V. A.; et al. **85f:78068**
- Vasil'ev, P. P. Optimal search for the zero of a function that is approximately calculable. (Russian) **85h:49021**

## 49D27 Decomposition methods

- Dolya, V. I. (with Kotovenko, E. A.) The decomposition approach to the solution of problems of optimal control of continuous production. (Russian) **85f:49055**
- Fed'ko, O. S. Decomposition in optimal control problems with time delay. (Russian. English summary) **85a:49040**
- Girer, H. Globally convergent decomposition methods for nonconvex optimization problems. (German summary) **85c:49043**
- Jamshidi, M. (with Wang, Chii Ming) A computational algorithm for large-scale nonlinear time-delay systems. **85b:49056**  
See also Wang, Chii Ming, **85b:49057**
- Käschel, Joachim Ein Dekompositionsverfahren für Optimierungsaufgaben—Theorie und EDV-Programm. [A decomposition method for optimization problems—theory and program for electronic data processing] (Not in MR)
- Kotovenko, E. A. See Dolya, V. I. **85f:49055**
- Papageorgiou, Markos Optimal control of generalized flow networks. (See **85k:90002**)

- Pierré, G. Decomposition through formalization in a product space. **85c:49044**
- Semeseenko, M. P. (with Tsygunov, V. A.) Decomposition of a control criterion by use of Lagrange multipliers in systems of operative control. (Not in MR)
- Stachowiak, Tadeusz (with Stasicki, Wiesław) A backward iteration technique for partitioning a set of entities due to their mutual dissimilarities. (English and Polish summaries) **85c:49045**
- Stasicki, Wiesław See Stachowiak, Tadeusz, **85c:49045**
- Turkov, V. I. Decomposition in the optimization of systems having equations in partial derivatives of the first order. **85j:49025**
- Tsygunov, V. A. See Semeseenko, M. P. (Not in MR)
- Wang, Chii Ming (with Jamshidi, M.) Optimal control of large-scale nonlinear systems with time-delay. **85b:49057**  
See also Jamshidi, M., **85b:49056**

## secondary classifications (49D27)

- Bernard-Weil, Elie See Claude, Daniel, **85h:92008**
- Claude, Daniel (with Bernard-Weil, Elie) Découpage et immersion d'un modèle neuro-endocrinien. (English summary) [Decoupling and immersion of a neuroendocrine model] **85h:92008**
- Korotkova, T. I. Sufficient conditions for decomposability of control problems. (Russian) **85f:49039**

## 49D29 Multiplier methods

- Borchardt, M. (with Schauble, M.) Lokale Dualitäts- und Stabilitätsuntersuchungen für nichtlineare Optimierungsprobleme mit differenzierbaren Gleichungsrestriktionen unter Zugrundelegung einer Klasse modifizierter Lagrangefunktionen. (English and Russian summaries) [Local duality and stability investigations for nonlinear optimization problems with differentiable equality restrictions on the basis of a class of modified Lagrangians] **85i:49056**
- Schauble, M. See Borchardt, M., **85i:49056**
- Zadachin, V. M. Method of solution of extremal problems with constraints, using a modified Lagrange function. (Russian) **85j:49026**

## secondary classifications (49D29)

- Ogawa, T. See Tanino, Tetsuzoh, **85c:49041**
- Tanino, Tetsuzoh (with Ogawa, T.) An algorithm for solving two-level convex optimization problems. **85c:49041**

## 49D30 Other methods, not based on necessary conditions (penalty function, etc.)

- Buttazzo, Giuseppe (with Percivale, Danilo) On the approximation of the elastic bounce problem on Riemannian manifolds. **85c:49046**
- Chen, Xiao Jun See Zhao, Ru Hui, (Not in MR)
- Chen, Zu Hao The mixed penalty function methods for solving constrained optimal control problems. (Chinese. English summary) **85h:49070**
- Dykhta, V. A. See Gurman, V. I.; et al. **85c:49048**
- Frehe, J. Optimale Steuerungen mit Zustandsbeschränkungen und die Methode der Straffunktionale. [Optimal controls with state constraints and the method of penalty functionals] (Not in MR)
- Gonzalez de Paz, R. B. Sur un problème d'optimisation de domaine. (English summary) [A problem of domain optimization] **85c:49047**
- Grossman, K. (with Kaplan, A. A.) Solution of finite-dimensional problems arising in the approximation of variational inequalities. (Russian) **85k:49080**
- Gurman, V. I. (with Dykhta, V. A.; Kolokol'nikova, G. A.; Konstantinov, G. N.; Moskalenko, A. I.; Nikiforova, I. A.) The principle of extension in optimal control problems. **85c:49048**
- Gwinner, J. On the penalty method for constrained variational inequalities. **85i:49057**
- Haslinger, Jaroslav (with Neittaanmäki, Pekka) Penalty method in design optimization of systems governed by a unilateral boundary value problem. (French summary) **85g:49038**
- Huang, Ai Xiang See Li, Kai Tai; et al. **85i:49058**
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(with Onumanyi, P.) A control operator and some of its applications. **85m:49062**
- Ivakhnenko, M. M. (with Korol', L. V.; Mikhailov, A. I.) Adaptive method of direct search for the extremum of a function. (Russian) **85b:49059**
- Kaplan, A. A. See Grossman, K., **85k:49080**
- Kolokol'nikova, G. A. See Gurman, V. I.; et al. **85c:49048**
- Konstantinov, G. N. See Gurman, V. I.; et al. **85c:49048**
- Korol', L. V. See Ivakhnenko, M. M.; et al. **85b:49059**
- Kuliev, G. F. The penalty method in an optimal control problem for hyperbolic equations. (Russian. English and Azerbaijani summaries) **85f:49056**

- Li, Du See Li, Kai Tai; et al. **85i:49058**
- Li, Kai Tai (with Huang, Ai Xiang; Ma, Yi Chen; Li, Du; Liu, Zhi Xing) Optimal control finite element approximation for penalty variational formulation of three-dimensional Navier-Stokes problem. **85i:49058**
- Liu, Zhi Xing See Li, Kai Tai; et al. **85i:49058**
- Ma, Yi Chen See Li, Kai Tai; et al. **85i:49058**
- Miele, A. (with Wang, T.) Supplementary optimality properties of the restoration phase of sequential gradient-restoration algorithms for optimal control problems. **85b:49060**
- Mikhailov, A. I. See Ivakhnenko, M. M.; et al. **85b:49059**
- Moskalenko, A. I. See Gurman, V. I.; et al. **85c:49048**
- Neittaanmäki, Pekka See Haslinger, Jaroslav, **85g:49038**
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- Onumanyi, P. See Ibiejugba, M. A., **85m:49062**
- Percivale, Danilo See Buttazzo, Giuseppe, **85c:49046**



Shen, Jian Ping (with Wang, Zu You) Calculation of optimal power flow using a multiplier penalty function and the Hessian matrix. (Chinese. English summary) 85k:49081

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Zhadan, V. G. Some estimates of the penalty coefficient in methods of exact penalty functions. (Russian) 85k:49062

Zhao, Ru Hual (with Chen, Xiao Jun) The turn-jump direct search method. (Chinese. English summary) (Not in MR)

secondary classifications (49D30)

Carey, G. F. (with Krishnan, Ramachander) Penalty finite element method for the Navier-Stokes equations. 85i:76021

Delfour, M. C. (with Payre, G.; Zolésio, J.-P.) Shape optimal design of a radiating fin. (See 85k:90002)

Denisov, D. V. (with Tretyakov, A. A.) Some criteria for the regularity of sets. (Russian) 85a:90189

Fiacco, Anthony V. ★ Introduction to sensitivity and stability analysis in nonlinear programming. 85b:90072

Fletcher, Roger Penalty functions. 85a:49063

Grossmann, C. (with Kaplan, A. A.) On the rate of convergence of sequential unconstrained minimization techniques. (French summary) 85b:90060

Hettich, Rainer A review of numerical methods for semi-infinite optimization. 85c:49053

Janlak, Adam (with Stankiewicz, Anna) The equivalence of local and global time-optimal control of a complex of operations. 85d:93028

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Pervozvanikii, A. A. The method of frozen coefficients in the synthesis of linear regulators. (Russian) 85b:49038

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Tretyakov, A. A. See Denisov, D. V., 85a:90189

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Friedrich, V. (with Hofmann, Bernd) ★ A predictor-corrector technique for constrained least-squares regularization. 85h:49072

Gnevko, S. V. (with Dymkov, M. P.) Solution of a continuous problem of linear programming with perturbed parameters. (Russian. English summary) 85b:49061

Guerchet, P. (with Wahdan, A. M.) Comments on: "An efficient algorithm for a time-suboptimal regulator problem for systems with delay in state" [Internat. J. Control 33 (1981), no. 5, 871-889; MR 83b:49029] by B. K. Kim and Z. Bien. 85a:49041

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Hietikko, Harri Global optimization of continuous functions using integrals. (Swedish. English summary) 85c:49053

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Kunchev, O. I. Dual method of solution of a terminal control problem. (Russian. English summary) 85a:49042

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Breido, T. E. (with Kazantsev, E. N.) Choice of uniformly ordered representations from the totality of segment sets. (Russian) 85j:90027

Cyras, A. A. ★ Mathematical models for the analysis and optimization of elastoplastic structures. 85f:73039

Daukas, V. The dual correction method for the initial support control in the problem of optimization of linear dynamic systems. (Russian. English and Lithuanian summaries) 85i:49028

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Beiko, T. I. A numerical method of solution of a problem of optimal control of phase domains. (Russian) 85j:49027

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Chernyak, S. I. Numerical minimax estimation in a parabolic system under boundary observation. (Russian) 85i:49059

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Barauskas, Arunas (with Tiesis, Vytautas) An optimally conditioned variable metric method taking into account the nonquadratic behavior of the objective function. (Russian. English and Lithuanian summaries) 85i:90111

Bernstein, Dennis S. A systematic approach to higher-order necessary conditions in optimization theory. 85c:90101

Borzenkov, A. V. (with Gabasov, R.) An algorithm for the solution of a special minimax problem. (Russian) 85g:90075

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Florot, Jean-Charles (with Vaca, Polo) Méthode de minimisation à encombrement réduit. (English summary) [Minimization method with reduced storage] 85m:90043

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Ganshin, G. S. Computation of the largest value of functions of several variables. 85c:49065

Griewank, A. (with Toint, Ph. L.) Numerical experiments with partially separable optimization problems. 85h:90102

Kalaba, Robert (with Tishler, Asher) A generalized Newton algorithm using higher-order derivatives. 85b:90061

Kosmol, Peter Zweistufige Lösungen von Optimierungsaufgaben. [Two-step solutions of optimization problems] 85j:90049

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Li, Ming Shi (with Cai, Jing Qiu) A mathematical model and computation for accumulation rate optimization. (Chinese. English summary) 85k:90055

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Meressoo, T. A method of order  $1+\sqrt{2}$  for the solution of nonlinear equations. (Russian. English and Estonian summaries) 85b:65049

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Myśliński, A. (with Sokolowski, J.; Zolésio, J.-P.) On nondifferentiable plate optimal design problems. (See 85k:90002)

Redkovskii, N. N. Calculation of a parameter-dependent surface on which the function reaches an extremum. (Russian. English summary) 85h:49009

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Skarin, V. D. On the analysis of improper convex programming problems from the standpoint of sequential optimization. (Russian) 85a:90179

Sokolowski, J. (with Matsumura, Toshio; Sakawa, Yoshiyuki) Numerical solution of a nonlinear two-point boundary value problem by an optimization technique. (Russian and Polish summaries) 85h:65167

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- Yakovlev, P. V. The method of weakening constraints for approximate solution of the general nonlinear programming problem. (Russian. English summary) 85d:90098
- Zadachin, V. M. Method of solution of extremal problems with constraints, using a modified Lagrange function. (Russian) 85j:49028
- Zhidkov, N. P. (with Romakina, M. E.; Shchedrin, B. M.) Solution of a system of nonlinear equations by the method of variation of weight of the minimized functional. (Russian) 85b:85044
- Zoltsio, J.-P. See Mylidiaki, A.; et al., (85b:90092)

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- A refinement of an optimality criterion and its application to parametric programming. 85c:49052
- Gustafson, S.-Å. A three-phase algorithm for semi-infinite programs. 85c:49053
- Hettich, Rainer A review of numerical methods for semi-infinite optimization. 85c:49053
- Philpott, A. B. See Anderson, E. J., 85c:49058
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- Yamasaki, Maretsugu Existence theorems in semi-infinite programs. 85c:49054

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- Brosowski, Bruno Parametric approximation and optimization. 85f:90104
- Burkov, V. N. (with Enaleev, A. K.; Kondrat'ev, V. V.; Tsvetkov, A. V.) Elements of the theory of optimal synthesis of functioning mechanisms of two-level active systems. I. Necessary and sufficient optimality conditions for regular functioning mechanisms with complete information at the center. 85d:90143
- Duffin, R. J. (with Jeroslow, Robert G.; Karlovitz, L. A.) Duality in semi-infinite linear programming. 85c:90057
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- Glashoff, Klaus (with Gustafson, S.-Å.) ★Linear optimization and approximation. 85b:90039
- Gustafson, S.-Å. (with Kortanek, K. O.) Semi-infinite programming and applications. 85i:90089
- See also Glashoff, Klaus, 85b:90039
- Hughes Hallett, A. J. Second-order iterations with guaranteed convergence. 85m:45027
- Janc, Mirko A note on approximate solutions in parametric semi-infinite optimization. 85d:90105
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- Karlovitz, L. A. See Duffin, R. J.; et al., 85c:90057
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- Tichatschke, Rainer (with Lohse, Thomas) Eine verallgemeinerte Schnittmethode für konvexe semi-infinite Optimierungsaufgaben. [A generalized cutting plane method for convex semi-infinite optimization problems] 85a:90180
- Tsvetkov, A. V. See Burkov, V. N.; et al., 85d:90143

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- Dębińska-Nagórska, Anna (with Just, Andrzej) Optimum control of distributed parameter system. (Russian and Polish summaries) 85c:49063
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- Günther, R. H. See Pfaff, E.-A., 85i:90100
- (Hunt, B.) See Fortin, Michel, 85a:49004
- Lee, Bruce E. (with Zak, S. H.; Brierley, S. D.) Stabilization of generalized linear systems via the algebraic Riccati equation. 85c:93072
- Pfaff, E.-A. (with Günther, R. H.) Die Normalform des quadratischen Optimierungsproblems und die Pol-Polaren-Theorie. (English and Russian summaries) [The normal form of the quadratic optimization problem and the pole-polar theory] 85i:90100
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- Zak, S. H. See Lee, Bruce E.; et al., 85c:93072

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- Kannappan, P. (with Sastry, Sundaram M. A.) Uniform convergence of convex optimization problems. 85b:49064
- Mackenroth, Uwe Some remarks on the numerical solution of bang-bang type optimal control problems. 85c:49055
- Paul, Jacob An application of the stability of the solution of the convex optimization problem in the Pareto optimization. (See 85g:90019)

- Rilemas, T. A. The bounded search method for solution of the problem of optimization of the structure of a hierarchical system. (Russian) 85i:49063
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- Song, Ch'ang Ho A sufficient condition for the monotone convergence of the successive overrelaxation method for convex programming problems. (Korean. English summary) 85b:49073
- Zhidkov, V. V. Questions of convergence, duality and averaging for functionals of the calculus of variations. (Russian) 85g:49039

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- Teo, K. L. See Wu, Zhan Sheng, 85b:49011
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- Yakin, M. Zafer An augmented Lagrangian algorithm for nondifferentiable optimization problems with inequality constraints. 85i:90107

#### 49D49 Geometric programming

- Stoyan, Yu. G. (with Vinaraki, V. Ya.) Incorrect problems of geometric design. (Russian. English summary) 85i:49064
- Vinaraki, V. Ya. See Stoyan, Yu. G., 85i:49064

#### 49D50 Periodic optimization

- Aliev, F. A. Optimization of discrete periodic systems in a singular case. (Russian. English and Azerbaijani summaries) 85b:49065
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- Rodrigues, J.-F. See Codegone, M., 85b:49066
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- Braides, Andrea Homogenization of noncoercive integrals. (Italian. English summary) 85m:49024
- Glowinski, Roland Numerical simulation for some applied problems originating from continuum mechanics. (See 85g:76004)
- Lutoborski, Adam (with Telega, József Joachim) Homogenization of a plane elastic arch. 85b:73023
- Telega, József Joachim See Lutoborski, Adam, 85b:73023

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- Cebuhar, W. A. (with Costanza, V.) Approximation procedures for the optimal control of bilinear and nonlinear systems. 85b:49074
- Chen, Yu Liu (with Mahmoud, M. S.; Singh, M. G.) An iterative block-diagonalization procedure for decentralized optimal control. 85f:49060
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- Daukhas, V. Z. See Gabasov, R.; et al., 85m:49065
- Evsenko, T. P. (with Tul'temirova, E. Sh.) Approximate solution of a nonlinear problem of synthesis of optimal control. (Russian) 85m:49064
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- (with Kirillova, F. M.) Constructive methods of optimal control. 85k:49084
- Glasko, V. B. (with Kriksin, Yu. A.) Some stochastically regularizing algorithms based on a difference representation of a quasi-optimal measure. (Russian) 85k:49085
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- Kaplinaki, A. I. (with Pesin, A. M.) A method of construction of randomized algorithms. 85a:49044
- Kirillova, F. M. See Gabasov, R., 85k:49084
- Kirsch, Andreas Some remarks concerning the computation of bang-bang controls. 85m:49068
- Kolev, L. V. Determination of the optimal control of discrete systems by means of interval analysis. (Bulgarian. English and Russian summaries) 85d:49041
- Kriksin, Yu. A. See Glasko, V. B., 85k:49085
- Kuritsyna, N. (with Pukhov, S.) A problem of optimal control. (Russian) 85m:49067
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- Tu, Xu Yan Structural synthesis of the most economical control systems. (Chinese. English summary) 85c:49056
- Tul'temirova, E. Sh. See Evsenko, T. P., 85m:49064

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- Gill, Philip E. (with Murray, Walter; Saunders, Michael A.; Wright, Margaret H.) Sparse matrix methods in optimization. 85k:65038
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- Murray, Walter See Gill, Philip E.; et al., 85k:65038
- Oleinik, O. A. (with Shamaev, A. S.; Yosifian, Gregori) Problèmes d'homogénéisation pour le système de l'élasticité linéaire à coefficients oscillant non-uniformément.

- (English summary) [Problems of homogenization for linear elasticity systems with nonuniformly oscillating coefficients] 85c:73051
- Rutman, Roman S. (with Cabral, Luiz M.) Descriptive regularization of the Fredholm integral equations of the first kind. (See 85c:85005)
- Ryabov, V. A. Optimization of a cylindrical shell of specified mass under external pressure. 85m:73038
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- Schnabel, R. B. Conic methods for unconstrained minimization and tensor methods for nonlinear equations. 85h:90109
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- Seidman, Thomas I. Two results on exact boundary control of parabolic equations. 85m:49069

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- Meister, H. Zur lokalen Lipschitzstetigkeit der Bellmanschen Funktion für Steuerprobleme mit linearen Zustandsgleichungen. (English and Russian summaries) [On the local Lipschitz continuity of the Bellman function for control problems with linear state equations] 85h:49057

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- Kaas, M. A. Some logical and topological aspects of fuzzy control in the formalism of differential inclusions. (See 85c:93003)
- Raczynski, S. On some generalization of "bang-bang" control. 85k:49086

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- Aubin, Jean-Pierre (with Cellina, A.) ★ Differential inclusions. 85j:49010
- Castaing, Charles Sur une nouvelle classe d'équation d'évolution dans les espaces de Hilbert. [On a new class of evolution equation in Hilbert spaces] 85j:34141
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- Prusko, Tadeusz Some applications of the topological degree theory to multivalued boundary value problems. 85j:34030
- Seah, Sek Wui Asymptotic equivalence of multivalued differential systems. (Italian summary) 85k:34020

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- Belikov, S. A. The construction of the domain of attainability for a certain dynamical object with nonstationary constraints. 85m:49070
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- Ch'a, Yong Pok Investigations of time-optimal control problems of linear distributed-parameter systems by the reachable region technique. II. (Korean. English summary) 85i:49067
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- Conti, R. Return sets of a linear control process. 85h:49076
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- Levitin, A. V. Reachable sets and generalized bang-bang principle for linear control systems. 85i:49070
- Ovseevich, A. I. (with Chernous'ko, F. L.) Two-sided estimates on the attainability domains of controlled systems. 85b:49070
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- Warga, J. Optimization and controllability without differentiability assumptions. 85i:49034
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- Tsafestas, S. G. (with Anagnostou, K. E.; Pimenides, T. G.) Stabilizing optimal control of bilinear systems with a generalized cost. 85k:49088
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- Świerniak, A. Two-layer suboptimal control structure. (Polish. English and Russian summaries) 85k:49060

##### 49E25 Effect of perturbations on controllability

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#### 49E99 None of the above, but in this section

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#### 49F05 Exterior differential forms, invariant integrals (Cartan theory)

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Olver, Peter Hyper-Jacobians, determinantal ideals and weak solutions to variational problems. 85c:58040

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#### 49F10 Minimal surfaces [See mainly 53A10, also 58E12.]

Albano, S. (with Gonzalez, E. H. A.) Rotating drops. 85b:49077

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Huang, Wu Halung Level curves and minimal points of capillary surfaces over convex domains. 85g:49042

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Belov, V. Ya. A formula of Morse in the critical case. (Russian) 85j:58039

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Ekeland, Ivar Une théorie de Morse pour les systèmes hamiltoniens. (English summary) [A Morse theory for Hamiltonian systems] 85c:58036

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Dadok, Jiri (with Harvey, Reese) Calibrations on  $R^6$ . 85a:53056

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Harvey, Reese (with Lawson, H. Blaine, Jr.) Calibrated geometries. 85i:53058

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- Morgan, Frank** Examples of unoriented area-minimizing surfaces. 85b:49079
- Parks, Harold R.** Regularity of solutions to elliptic isoperimetric problems. 85m:49077
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- Fomenko, A. T.** \*Вариационные методы в топологии. (Russian) [Variational methods in topology] 85k:58017
- The rate of growth and least volumes of globally minimal surfaces in cobordisms. (Russian) 85h:58043
- Lipovan, O.** On the  $\Omega$ - $\Gamma$ -submeasurability of multivalued maps. (Romanian. French summary) 85b:28010
- Morgan, Frank** Area-minimizing currents bounded by higher multiples of curves. 85k:49091

#### 49F25 Surface area; Weierstrass and Burkill integrals, subadditive set functions

- Averna, A.** (with Fiacca, A.; Lodovici, C.) On existence theorems for the Burkill integral. (Italian. English summary) 85b:49080
- Bardaro, Carlo** Some convergence theorems for the multiple integral in the calculus of variations. (Italian) 85k:49092
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- Caffarelli, Luis A.** (with Spruck, Joel) Convexity properties of solutions to some classical variational problems. 85f:49062
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- Brown, Robert Arthur** See Ungar, L. H., 85a:58017
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- Schwartz, Jacob T.** (with Sharir, Micha) On the "piano movers" problem. II. General techniques for computing topological properties of real algebraic manifolds. 85h:52014
- Sharir, Micha** See Schwartz, Jacob T., 85h:52014
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- Ungar, L. H.** (with Brown, Robert Arthur) The dependence of the shape and stability of captive rotating drops on multiple parameters. 85a:58017
- Vianello, Maurizio** Equilibrium of membranes with material boundaries. (Italian. English summary) 85g:73028
- Wei, S. Walter** An average process in the calculus of variations and the stability of harmonic maps. 85a:58024
- See also Treibergs, Andrejs E., 85e:53082
- Ziemer, William P.** Cauchy flux and sets of finite perimeter. 85e:73003

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##### 49G05 Variational approach to eigenvalues

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- Collatz, Lothar** Applications of nonlinear optimization to sciences. 85c:49058
- Egorov, Yu. V.** (with Kondrat'ev, V. A.) Estimates for the first eigenvalue of the Sturm-Liouville problem. (Russian) 85h:49082
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- Belov, V. Ya.** A formula of Morse in the critical case. (Russian) 85j:58039
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- Buonocore, Pasquale** Sur la rigidité à la torsion des domaines doublement connexes. (English summary) [On the torsional rigidity of doubly connected domains] 85c:49003
- Graham-Eagle, James** A new method for calculating eigenvalues with applications to gravity-capillary waves with edge constraints. 85c:76016
- Jó, István** (with Stachó, L. L.) Generalization of an inequality of G. Pólya concerning the eigenfrequencies of vibrating bodies. 85f:35159
- Kholkin, V. I.** The maximum of the fundamental frequency of an inhomogeneous ring membrane. (Russian) 85k:73064
- Kostomarov, D. P.** (with Kukulin, V. I.; Sazonov, P. B.) The discrete generator coordinate method for solving the many-particle Schrödinger equation. (Russian) 85g:81227
- Kukulin, V. I.** See Kostomarov, D. P.; et al., 85g:81227
- Kydralliev, S. K.** Asymptotic behavior of the spectrum of variational problems with a degenerate elliptic constraint. (Russian. English summary) 85h:35162
- Papastavridis, J. G.** An eigenvalue criterion for the study of the Hamiltonian action's extremality. 85j:70002
- Sazonov, P. B.** See Kostomarov, D. P.; et al., 85g:81227
- Stachó, L. L.** See Jó, István, 85f:35159

##### 49G10 Rayleigh-Ritz methods

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- Fusciardi, A.** On the convergence of Rayleigh-Ritz approximations for a class of nonlinear eigenvalue problems. 85i:49072
- Jung, Michael** See Langer, Ulrich, 85i:49073
- Langer, Ulrich** (with Jung, Michael) Zur numerischen Bestimmung der Konstanten in den Ungleichungen von Friedrichs und Poincaré. [The numerical determination of the constants in the inequalities of Friedrichs and Poincaré] 85i:49073
- Li, Jia Chun** Generalized Rayleigh principle and its applications. 85f:49065
- Lyashenko, I. N.** (with Meredov, Kh. M.; Embergenov, A.) Investigation of the variational-difference method for determining the eigenvalues of the Laplace operator. (Russian. English summary) 85f:49066
- Meredov, Kh. M.** See Lyashenko, I. N.; et al., 85f:49066
- Olhoff, N.** (with Parbery, R.) Optimal structural design for maximum distance between adjacent eigenfrequencies. (See 85k:90002)
- Parbery, R.** See Olhoff, N., 85k:90002

##### secondary classifications (49G10)

- Cohen, Maurice** An iterative solution of Schrödinger's equation. 85f:81015
- Pack, D. C.** The development of bivariational principles for the calculation of upper and lower bounds. (Russian and Polish summaries) 85c:47011

##### 49G15 Weinstein and Aronszajn methods, intermediate problems

##### 49G20 Linear operators in Hilbert spaces

- Blinov, S. P.** Optimization of the first eigenvalue of a fourth-order elliptic operator. (Russian) 85j:49031
- Voss, Heinrich** Computation of eigenvalues of nonlinear eigenvalue problems. (See 85i:65004)

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- Froelich, Piotr** (with Löwdin, Per-Olov) On the Hartree-Fock scheme for a pair of adjoint operators. 85b:47020b
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- See also Froelich, Piotr, 85b:47020b

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- Johnson, Gerald W.** (with Skoug, D. L.) Notes on the Feynman integral. II. 85k:81070b
- (with Skoug, D. L.) Notes on the Feynman integral. I. 85k:81070a
- Skoug, D. L.** See Johnson, Gerald W., 85k:81070a and 85k:81070b
- Vladimirova, A.** Estimation of solutions of systems of equations with multiplicative noise in a system of observations. (Russian) 85h:93075

#### 49H05 Variational principles of physics [See also 70-XX, 81-XX.]

- Bampi, Franco** (with Morro, A.) The connection between variational principles in Eulerian and Lagrangian descriptions. 85b:49084
- Berdichevskii, V. L.** \*Вариационные принципы механики сплошной среды. (Russian) [Variational principles of continuum mechanics] 85c:49059
- Burrows, B. L.** (with Core, P. W.) Complementary variational principles and variational-iterative principles with geometrical interpretations. 85d:49044
- Capris, G.** Spatial variational principles in continuum mechanics. 85b:49081
- Core, P. W.** See Burrows, B. L., 85d:49044
- Gryn', V. I.** Variational principles for the transport equation and their relation to  $P_N$ -approximation of the method of spherical harmonics. (Russian) 85i:49074
- Guiaşu, Silviu** (with Shenitzer, Abe) The principle of maximum entropy. (Not in MR)
- Henneaux, M.** On the inverse problem of the calculus of variations in field theory. 85h:49085
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- Ladyzhenskaya, O. A. See Kapitanskiĭ, L. V., 85b:49083  
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- Amorim, R. A projective constrained variational principle for a classical particle with spin. 85k:78011  
 Athuri, S. N. Alternate stress and conjugate strain measures, and mixed variational formulations involving rigid rotations, for computational analyses of finitely deformed solids, with application to plates and shells. I. Theory. 85a:73072  
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- Blatter, Christian Über Kurven konstanter Breite. [On curves of constant breadth] (Not in MR)  
 Didday, Edwin Croisements, ordres et ultramétriques. [Crossings, orders and ultrametrics] (Not in MR)  
 51-01 Elementary exposition; textbooks  
 Anîța, Sebastian See Brânzei, Dan; et al., 85c:51001  
 Atiyah, M. F. What is geometry? (Czech) 85h:51001  
 Bigalke, Hans-Günther ★ Kugelgeometrie. (German) [Spherical geometry] 85k:51001  
 Bohne, Erhart (with Martini, Horst; Wenzel, Jürgen) Zur konstruktiven Geometrie. (English and Russian summaries) [On constructive geometry] 85e:51001  
 Brânzei, Dan (with Onofraș, Eugen; Anîța, Sebastian; Isvoranu, Gheorghe) ★ Bazele raționalului geometric. (Romanian) [Foundations of geometric reasoning] 85c:51001  
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 Pickert, Günter ★ Metrische Geometrie in vektorieller Darstellung. (German) [Metric geometry in vectorial presentation] 85e:51003  
 Quaiser, E. ★ Bewegungen in der Ebene und im Raum. (German) [Motions in the plane and in space] 85h:51002



- Shirokov, P. A. ★ Краткий очерк основ геометрии Лобачевского. (Russian) [A brief outline of the elements of Lobachevskian geometry] 85a:51002
- Tisseron, Claude ★ Géométries affines, projective et euclidienne. (French) [Affine, projective and Euclidean geometries] 85d:51001
- (Tolosa, Juan) See Efimov, N. V., 85k:51002
- Wenzel, Jürgen See Bohne, Erhart; et al., 85e:51001

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- Beiglböck, Wolf D. ★ Lineare Algebra. (German) [Linear algebra] 85j:15001
- Boseck, Helmut ★ Einführung in die Theorie der linearen Vektorräume. (German) [Introduction to the theory of linear vector spaces] 85h:15002
- Brieskorn, E. ★ Lineare Algebra und analytische Geometrie. I. (German) [Linear algebra and analytic geometry. I] 85m:00001
- Coxeter, H. S. M. (with Greitzer, S. L.) ★ Zeitlose Geometrie. (German) [Timeless geometry] 85c:51031
- Cleason, Andrew M. How does one get so much information from so few assumptions? (See 85g:00029)
- Greitzer, S. L. See Coxeter, H. S. M., 85c:51031
- Koecher, Max ★ Lineare Algebra und analytische Geometrie. (German) [Linear algebra and analytic geometry] 85b:15001
- Lorimer, Peter Some of the finite projective planes. 85d:51002
- (Müller, Rolf) See Coxeter, H. S. M., 85c:51031
- (Rauch, Herbert) See Coxeter, H. S. M., 85c:51031
- (Scholz, Erhard) See Brieskorn, E., 85m:00001
- (Wellstein, Hartmut) See Coxeter, H. S. M., 85c:51031

## 51-02 Advanced exposition (research surveys, monographs, etc.)

secondary classifications (51-02)

- (Mozer, William) See Research problems in discrete geometry, 85h:52002
- Prieß-Crampe, Sibylla ★ Angeordnete Strukturen. (German) [Ordered structures] 85e:51025
- Schwabhäuser, W. (with Szmielow, W.; Tarski, Alfred) ★ Metamathematische Methoden in der Geometrie. (German) [Metamathematical methods in geometry] 85e:03004
- Szmielow, W. See Schwabhäuser, W.; et al., 85e:03004
- Tarski, Alfred See Schwabhäuser, W.; et al., 85e:03004
- Research problems in discrete geometry ★ Research problems in discrete geometry, 1981. 85h:52002

## 51-03 Historical (must also be assigned at least one classification number from Section 01)

- Xambó-Descamps, Sebastian Non-Euclidean geometry: from Euclid to Gauss. (Catalan) 85a:51003

secondary classifications (51-03)

- Artmann, Benno Hippasos und das Dodekaeder. [Hippasos and the dodecahedron] 85i:01005
- Ayoub, Raymond The lemniscate and Fagnano's contributions to elliptic integrals. 85g:01015
- Brigaglia, Aldo (with Nastasi, Pietro) The solutions of Girolamo Saccheri and Giovanni Ceva to Ruggero Ventimiglia's *Geometram quacro*: Italian projective geometry in the late seventeenth century. (Italian. English summary) 85k:01013
- (Fagano, Giulio) See Ayoub, Raymond, 85g:01015
- Freudenthal, Hans The impact of von Staudt's foundations of geometry. (See 85i:00007)
- Inhethven, Rüdiger ★ Konstruktive Geometrie. (German) [Constructive geometry] 85m:00011
- Knorr, Wilbur "La croix des mathématiciens": the Euclidean theory of irrational lines. 85f:01007a
- Erratum: "La croix des mathématiciens": the Euclidean theory of irrational lines". 85f:01007b
- Matvievskaia, G. P. ★ Становление плоской и сферической тригонометрии. (Russian) [The beginnings of plane and spherical trigonometry] 85a:01005
- Meschkowski, Herbert ★ Problemgeschichte der Mathematik. I. (German) [Problem history of mathematics. I] 85k:01002
- Nastasi, Pietro See Brigaglia, Aldo, 85k:01013
- (Netuka, Ivan) See Wagon, Stanley, 85i:01024
- Poznyak, E. G. Geometry in the large. (Russian) (See 85g:01004)
- Reventós, Agustí From Riemann to the present. (Catalan) 85m:01050
- Rosenbaum, R. A. Is Euclid on the skids? (See 85i:00007)
- Schneer, Cecil J. The Renaissance background to crystallography. 85a:01025
- Toth, Imre Gott und Geometrie: eine viktorianische Kontroverse. [God and geometry: a Victorian controversy] 85i:01020b
- (Vesely, Jiri) See Wagon, Stanley, 85i:01024
- Vita, Vincenzo Two geometric loci in Aristotle's *Meteorologica*. (Italian) 85f:01009
- Wagon, Stanley Circle-squaring in the twentieth century. (Czech) 85i:01024

## 51-04 Explicit machine computation and programs (not the theory of computation or programming)

secondary classifications (51-04)

- Büttner, Wolfram Einige Translationsebenen der Ordnung 64. [Some translation planes of order 64] 85i:51006
- Ivanov, G. S. See Tevlin, A. M.; et al., 85e:51031
- Janko, Zvonimir (with Traub, Joe Fred) Determination of projective planes of order 9 with a nontrivial perspectivity. 85c:51019
- Nartova, L. G. See Tevlin, A. M.; et al., 85e:51031
- Polozov, V. S. See Tevlin, A. M.; et al., 85e:51031

- Tevlin, A. M. (with Ivanov, G. S.; Nartova, L. G.; Polozov, V. S.; Yakunin, V. I.) ★ Курс начертательной геометрии (на базе ЭВМ). (Russian) [A course in descriptive geometry (based on the computer)] 85e:51031
- Tonchev, Vladimir D. The isomorphism of the Cohen, Haemers-van Lint and De Clerck-Dye-Thas partial geometries. 85m:51003
- Traub, Joe Fred See Janko, Zvonimir, 85c:51019
- Wu, Wen Jun Mechanical theorem proving in elementary geometry and differential geometry. 85e:53001
- Yakunin, V. I. See Tevlin, A. M.; et al., 85e:51031

## 51-06 Proceedings, conferences, etc.

- (Bariotti, Adriano) See Proceedings: Conference on combinatorial and incidence geometry: principles and applications, 85g:51001
- (Holroyd, F. C.) See Geometrical combinatorics, 85k:51003
- (Marchi, Mario) See Proceedings: Conference on combinatorial and incidence geometry: principles and applications, 85g:51001
- (Tallini, Giuseppe) See Proceedings: Conference on combinatorial and incidence geometry: principles and applications, 85g:51001
- (Wilson, Robin James) See Geometrical combinatorics, 85k:51003
- Conference:  
Combinatorial and incidence geometry: principles and applications ★ Atti del convegno "Geometria combinatoria e di incidenza: fondamenti e applicazioni". (Italian) [Proceedings of the conference on combinatorial and incidence geometry: principles and applications] 85g:51001
- Geometrical combinatorics ★ Geometrical combinatorics. 85k:51003
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- La Mendola ★ Atti del convegno "Geometria combinatoria e di incidenza: fondamenti e applicazioni". (Italian) [Proceedings of the conference on combinatorial and incidence geometry: principles and applications] 85g:51001
- Milton Keynes ★ Geometrical combinatorics. 85k:51003
- Proceedings:  
Conference on combinatorial and incidence geometry: principles and applications ★ Atti del convegno "Geometria combinatoria e di incidenza: fondamenti e applicazioni". (Italian) [Proceedings of the conference on combinatorial and incidence geometry: principles and applications] 85g:51001

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- (Kock, Anders) See Category theoretic methods in geometry, 85b:18001
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- (Radó, F.) See Proceedings: National colloquium on geometry and topology, 85k:00011a
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- Colloquium:  
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- Geometry and topology ★ Proceedings of the national colloquium on geometry and topology. 85k:00011a
- Proceedings:  
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- Rein ★ Zweites Österreichisches Geometrie-Kolloquium in Rein. (German) [Second Austrian geometry colloquium in Rein] 85m:53002
- Tirgu-Mureş ★ Proceedings of the national colloquium on geometry and topology. 85k:00011a
- Workshop:  
Category theoretic methods in geometry ★ Category theoretic methods in geometry. 85b:18001

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- Borga, Marco Some properties of separation in the elliptic or projective plane. (Italian. English and German summaries) 85b:51001
- Buekenhout, Francis Cooperstein's theory. 85b:51002
- Capodaglio Di Corco, Rita Homographic invariants. (Italian) 85i:51001
- Lorimer, Peter Some of the finite projective planes. 85d:51002
- Lusi, Giannangelo On a theorem of Poncet. (Italian. English summary) 85f:51001

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- Grosser, Siegfried K. (with Herfort, W.) Ein explizites Modell der projektiven Ebene. [An explicit model of the projective plane] 85e:51032
- Herfort, W. See Grosser, Siegfried K., 85e:51032
- Kühnel, W. (with Banchoff, T. F.) The 9-vertex complex projective plane. 85d:51016
- Padmanabhan, R. Logic of equality in geometry. 85m:08012
- Sarath, B. (with Varadarajan, K.) Fundamental theorem of projective geometry. 85d:16008
- Varadarajan, K. See Sarath, B., 85d:16008

## 51A10 Homomorphism, automorphism and dualities

- Brauer, H. Zur Theorie linearer Abbildungen. [On the theory of linear mappings] 85h:51003
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- Grundhöfer, Theo Projektivitätsgruppen von Translationsebenen. [Projectivity groups of translation planes] 85j:51001
- Havel, Václav Replaceable nets and improper collineations. 85h:51004
- Knitter, Konrad Transformations projectives de la droite comme compositions des transformations antiprojectives cycliques. [Projective transformations of lines as compositions of cyclic antiprojective transformations] 85h:51005
- Pasini, Antonio The nonexistence of proper epimorphisms of finite thick generalized polygons. 85j:51002

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- Barlotti, Adriano (with Strambach, Karl)  $k$ -transitive permutation groups and  $k$ -planes. 85c:20005
- Capodaglio Di Cocco, Rita Homographic invariants. (Italian) 85i:51001
- Faina, Giorgio On the group of automorphisms of a finite Buekenhout oval which is not projective. 85d:51012
- Koźniowski, Edwin See Matla, Roman, 85j:51024
- Matla, Roman (with Koźniowski, Edwin) On a polar complex. (Polish. English and Spanish summaries) 85j:51024
- Schaeffer, Helmut Eine Kennzeichnung der dilatationen endlicher Desarguesscher Ebenen der Charakteristik  $\neq 2, 3, 5$ . (English summary) [A characterization of the dilatations of finite Desarguesian planes of characteristic  $\neq 2, 3, 5$ ] 85j:51003
- Strambach, Karl See Barlotti, Adriano, 85c:20005
- Zář, Stanislav Central affine mappings of the linear space  $\text{End } V^n$  of linear mappings  $V^n \rightarrow V^n$ . 85d:15003

## 51A15 Structures with parallelism

- Berindeanu-Bănyai, Mihaela On the transitivity of affine structures. (Romanian summary) 85g:51002
- Billotti, Mauro (with Herzer, Armin) André structures with nonnormal transitive translation groups. (Italian. English summary) 85b:51003
- (with Herzer, Armin) Zur Geometrie der Translationsstrukturen mit eigentlichen Dilatationen. [On the geometry of translation structures with proper dilatations] 85k:51004
- Herzer, Armin See Billotti, Mauro, 85b:51003 and 85k:51004
- Maxson, C. J. Near rings associated with Sperner spaces. 85e:51004

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- André, Johannes Coherent configurations and noncommutative spaces. 85c:51013
- Crismale, Michele (with Micelli, Giuseppe) On a class of André translation structures. (Italian. English summary) 85e:51014
- Grochowska, Małgorzata An axiom system for oriented Euclidean parallelity. 85f:51009
- Larato, B. Incidence structures associated with Hermitian curves. (Italian. English summary) 85c:51021
- Micelli, Giuseppe See Crismale, Michele, 85e:51014
- Pantaleo, Tito (with Volzone, Gaetano) Two classes of metric-affine spaces of dimension four over a Galois field of odd order. (Italian. English summary) 85i:51017
- Ruoff, Dieter On the uniqueness of the joining line in space. 85j:51008
- Volzone, Gaetano See Pantaleo, Tito, 85i:51017

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- van de Craats, J. On Simonis' 10<sub>3</sub> configuration. 85b:51004
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- Page, Warren (with Dorwart, Harold L.) Numerical patterns and geometrical configurations. 85i:51002

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- Billotti, Mauro (with Menichetti, Giampaolo) Derived semifield planes with affine elations. 85c:51016
- Edge, W. L. PGL(2, 7) and PSL(2, 7). 85m:20007
- Eggleton, Roger B. (with Sivakumaran, V.) Circle configurations in the plane. 85e:51027
- Hesslink, Wim H. Schemes of linear configurations in projective plane. 85c:14001
- Menichetti, Giampaolo See Billotti, Mauro, 85c:51016
- Nagamuni Reddy, L. See Sitaram, K., 85f:51003
- Rigby, J. F. Pappus lines and Leisenring lines. 85e:51007
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- See, Michele Combinatorial geometry and finite geometries. (Italian. English summary) 85c:51014
- Sitaram, K. (with Nagamuni Reddy, L.) Associativity in a Hall planar ternary ring. 85f:51003
- Sivakumaran, V. See Eggleton, Roger B., 85e:51027

## 51A25 Algebraization [See also 12Kxx, 20N10.]

- Caggegi, Andrea New Bol quasifields. (Italian. English summary) 85g:51003
- Faulkner, John R. (with Ferrar, J. C.) Homomorphisms of Moufang planes and alternative places. 85c:51002
- Coordination of Moufang-Veldkamp planes. 85d:51003
- Ferrar, J. C. See Faulkner, John R., 85c:51002
- Lisio, Angelo (with Milici, Salvatore) Bol's  $(U, V; I)$ -proposition and ternary systems with quasizero. (Italian) 85e:51005
- Machala, František Epimorphisms von lokalen Ternärtringen. [Epimorphisms of local ternary rings] 85e:51006

- Maheswari, B. (with Nagamuni Reddy, L.; Sitaram, K.) Planar ternary rings, with zero, associated with a Moufang plane. 85m:51001
- Milici, Salvatore See Lisio, Angelo, 85e:51005
- Nagamuni Reddy, L. See Sitaram, K., 85f:51003 and Maheswari, B.; et al., 85m:51001
- Sitar, J. On affine planes over  $A_n^*$ -quasigroups. 85c:51003
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- Struve, Horst Affine Ebenen mit Orthogonalitätsrelation. [Affine planes with orthogonality relation] 85k:51005

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- Basile, Alessandro Derivatives of finite Desarguesian planes. (Italian) 85i:51014
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- Fernandes, Olga On an oval with the four point Pappian property. 85j:51015
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 Wilker, J. B. Groups of elliptic Möbius transformations. **85m:51009**

51F99 None of the above, but in this section

- Lang, Konrad Begründung der ebenen Metrik durch Mittelsenkrechten. [Justification of plane metrics by midperpendiculars] **85f:51019**

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- Margulis, G. A. Free completely discontinuous groups of affine transformations. (Russian) **85e:22015**

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- Hedlíková, Jarmila Ternary spaces, media, and Chebyshev sets. **85e:51024**  
 Kalhoff, Franz Zur algebraischen Kennzeichnung der Halbordnungen projektiver Ebenen. (English summary) [On the algebraic characterization of semiorders of projective planes] **85i:51024**  
 Machala, František Über die Fortsetzung einer Anordnung der affinen Klingenbergschen Ebene in einer Anordnung der projektiven Klingenbergschen Ebene. (Russian and Czech summaries) [On the extension of an ordering of the affine Klingenberg plane to an ordering of the projective Klingenberg plane] **85h:51027**  
 Pries-Crampe, Sibylla ★ Angeordnete Strukturen. (German) [Ordered structures] **85e:51025**

secondary classifications (51G05)

- Hanner, Olof A system of axioms for Euclidean and non-Euclidean geometry. (Swedish. English summary) **85b:51019**

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51H10 Topological linear incidence structures

- Betten, Dieter Die Projektivitätengruppe einer Klasse 4-dimensionaler Translationsebenen. (English summary) [The group of projectivities of a class of 4-dimensional translation planes] **85j:51018**  
 (with Horstmann, Cay) Einbettung von topologischen Raumgeometrien auf  $\mathbb{R}^3$  in den reellen affinen Raum. (English summary) [Embedding of topological spatial geometries on  $\mathbb{R}^3$  into real affine space] **85e:51029**  
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 4-dimensionale projektive Ebenen mit 3-dimensionaler Translationsgruppe. [4-dimensional projective planes with 3-dimensional translation group] **85k:51024**  
 Groh, Hans-Joachim (with Lippert, Martin F.; Pohl, Hans-Joachim)  $\mathbb{R}^2$ -planes with 3-dimensional automorphism group fixing precisely a line. **85f:51020**  
 Hähl, Hermann Eine Klasse von achtdimensionalen lokal kompakten Translationsebenen mit großen Scherungsgruppen. (English summary) [A class of eight-dimensional, locally compact translation planes with many shears] **85e:51026**  
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 Compact projective planes with homogeneous ovals. **85f:51019**  
 Pohl, Hans-Joachim See Groh, Hans-Joachim; et al. **85f:51020**

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- Rosenfeld, B. A. (with Stepashko, T. A.) Meta-symplectic geometries as geometries on the absolutes of Hermitian planes. (Russian) **85k:51026**  
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 Locally classical topological Benz planes are classical. **85a:51011**  
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- Hähl, Hermann Eine Klasse von achtdimensionalen lokal kompakten Translationsebenen mit großen Scherungsgruppen. (English summary) [A class of eight-dimensional, locally compact translation planes with many shears] **85e:51026**

## 51H20 Topological geometries on manifolds [See also 57-XX.]

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Salemann, Helmut Compact 16-dimensional projective planes with large collineation groups. II. 85h:51029

Compact 16-dimensional projective planes with large collineation groups. III. 85h:51030

secondary classifications (51H20)

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## 51H25 Geometries with differentiable structure [See also 53Cxx, 53C70.]

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## 51H30 Geometries with algebraic manifold structure [See also 14-XX.]

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## 51H99 None of the above, but in this section

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## 51Jxx Incidence groups

## 51J05 General theory

Marchi, Mario Fibered incidence groups which are not kinematic. 85d:51014

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Hiramine, Yutaka On semifield planes of even order. 85h:51006

Karsel, Helmut (with Marchi, Mario) Plane fibered incidence groups. 85m:51006

Marchi, Mario See Karsel, Helmut, 85m:51006

Schulte, Egon Reguläre Inzidenzkomplexe. II, III. (English summary) [Regular incidence complexes. II, III] 85d:51006

## 51J15 Kinematic spaces

Karsel, Helmut (with Marchi, Mario) Plane fibered incidence groups. 85m:51006

(with Maxson, C. J.) Kinematic spaces with dilatations. 85h:51031

Marchi, Mario (with Zizioli, E.) On a class of kinematic spaces. 85b:51018

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Zizioli, E. See Marchi, Mario, 85b:51018

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Cheremisin, A. I. Jordan kinematics. (Russian) 85g:17011

## 51J20 Representation by near-fields and near-algebras [See also 12K05, 16A76.]

Faina, Giorgio A new class of 2-transitive involutory permutation sets. 85i:51026

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Dubikajtis, L. A system of axioms for plane Euclidean, hyperbolic and elliptic geometries. 85m:51007

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secondary classifications (51K05)

Desa, M. (with Rosenberg, I. G.) Intersection and distance patterns. 85j:05010

Maehara, Hiroshi On the sphericity for the join of many graphs. 85i:05093

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Tay, Tiong Seng Review: rigidity problems in bar-and-joint frameworks and linkages of rigid bodies. 85c:70003

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White, Neil L. (with Whiteley, Walter) The algebraic geometry of stresses in frameworks. 85f:52024

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## 51K10 Synthetic differential geometry

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Bunge, Marta (with Heggie, Murray) Synthetic calculus of variations. 85m:18004

Busemann, H. (with Phadke, B. B.) Nonconvex spheres in  $G$ -spaces. 85f:53063

(with Phadke, B. B.) A general version of Beltrami's theorem in the large. 85m:53064

Heggie, Murray See Bunge, Marta, 85m:18004

Kock, Anders A combinatorial theory of connections. 85i:53077

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Moerdijk, Ieke (with Reyes, Gonzalo E.) Cohomology theories in synthetic differential geometry. 85m:58004

(with Reyes, Gonzalo E.) Smooth spaces versus continuous spaces in models for synthetic differential geometry. 85i:03196

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Evans, Anthony B. Distance in finite geometries. II. 85f:51010b

Distance in finite geometries. I. Translation planes. 85f:51010a

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## 51Lxx Geometric order structures [See also 53C75.]

## 51L05 Geometry of orders of nondifferentiable curves

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## 51Mxx Real and complex geometry

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(Müller, Rolf) See Coxeter, H. S. M., 85c:51031

(Rauch, Herbert) See Coxeter, H. S. M., 85c:51031

(Wellstein, Hartmut) See Coxeter, H. S. M., 85c:51031

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Bottema, Oene (with Devidé, Vladimir) Einige merkwürdige Punkte im Dreieck. (Serbo-Croatian summary) [Some remarkable points in a triangle] 85b:51018

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Kordos, Marek Full planes and their isometries. (Russian summary) 85g:51012a

Full four-absolute geometry. (Russian summary) 85g:51012b

Lang, Konrad Begründung der ebenen Metrik durch Mittelsenkrechten. [Justification of plane metrics by midperpendiculars] 85f:51019

Okawa, Takio Sur la direction de la géométrie élémentaire. [On the direction of elementary geometry] 85e:51002

Page, Warren (with Dorwart, Harold L.) Numerical patterns and geometrical configurations. 85i:51002

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secondary classifications (51M10)

Arapasov, B. N. ★ Дискретные группы преобразования и структуры многообразия. [Discrete transformation groups and structures on manifolds] 85i:57002

Bannal, Elichi (with Blokhuis, A.; Seidel, J. J.; Delsarte, Ph.) An addition formula for hyperbolic space. 85m:52006

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Dubikajtis, L. A system of axioms for plane Euclidean, hyperbolic and elliptic geometries. 85m:51007

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Shirokov, P. A. ★ Краткий очерк основ геометрии Лобачевского. (Russian) [A brief outline of the elements of Lobachevskian geometry] 85a:51002

Vinberg, É. B. Discrete groups of reflections in Lobachevskii spaces of large dimensions. (Russian) 85c:51028

Weiss, Asia Ivrić (with Lučić, Zoran) Regular polyhedra in hyperbolic three-space. 85j:52011

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Cardoso, Jayme Machado ★ Uma generalização da homologia. (Portuguese) [A generalization of homology] 85a:51015

Dubuc, Serge Courbes de von Koch et courbes d'Osgood. [von Koch curves and Osgood curves] 85a:51016

Eckert, Ernest J. The group of primitive Pythagorean triangles. 85a:51017

Guinand, Andrew P. Euler lines, tritangent centers, and their triangles. 85k:51029

Kühnel, W. (with Banchoff, T. F.) The 9-vertex complex projective plane. 85d:51016

Lu, Xin Long The condition for equality between a spatial angle consisting of two oblique lines and its projective angle. (Chinese. English summary) 85d:51017

Schweigert, Dietmar Ein verbandstheoretischer Aspekt der Linealkonstruktion. [A lattice-theoretic aspect of construction with a ruler] 85c:51033

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Du, Ding Zhu (with Hwang, F. K.) A new bound for the Steiner ratio. 85i:05080a (with Hwang, F. K.; Weng, Jia Feng) Steiner minimal trees on zig-zag lines. 85i:05080b

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Melnicke, Eberhard Isophoten auf windstiefen Regelflächen bei geometrischer Zentralbeleuchtung mit einem Bündel orientierter Lichtstrahlen. [Isophotes on skew ruled surfaces at geometric central illumination with a bundle of oriented light rays] 85j:53008

Pedersen, Jean Geometry: the unity of theory and practice. 85j:52006

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Zeitler, Herbert Nochmals: die Sache mit den Möbiusbändern. [One more time: the thing about Möbius strips] 85c:51035

## 51M20 Polyhedra and polytopes; regular figures, division of spaces

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Brünger, G. Three-triangle-tangram. 85b:51037

Burdina, V. I. Expressions for the solid angles in crystallographic polyhedra. (Not in MR)

Chang, Geng Zhe (with Davis, Philip J.) A circulant formulation of the Napoleon-Douglas-Neumann theorem. 85b:51022

Crowe, D. W. (with Schoenberg, I. J.) On the equidecomposability of a regular triangle and a square of equal areas. 85j:51022

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Edelman, Paul H. A partial order on the regions of  $R^n$  dissected by hyperplanes. 85k:51030

Gerver, Joseph L. The dissection of a polygon into nearly equilateral triangles. 85h:51033

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Projektive Eigenschaften eines besonderen Systems von Polyedern der Hexaedergruppe. [Projective properties of a special system of polyhedra of the hexahedron group] 85a:51020

Hughes Jones, R. Folding polyhedra. 85b:51023

Pedersen, Jean See Hilton, Peter, 85i:51028

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Togliani, Luigi Morphology of plane hexagons. (Italian. English summary) 85i:51029

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Wunderlich, Walter Ringartige Wackelpolyeder. [Torus-like shaky polyhedra] 85b:51024

secondary classifications (51M20)

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Buset, Dominique Construction of a locally icosahedral graph. 85e:05055

Georgiev, P. G. Approximation of convex  $n$ -gons by  $(n-1)$ -gons. (Bulgarian. English summary) 85m:52001

Graham, Ronald L. Euclidean Ramsey theorems on the  $n$ -sphere. 85b:05051

Grayson, Matthew A. The orbit space of a Kleinian group: Riley's modest example. 85b:20065

Greenberg, Peter A smooth scissors congruence problem. 85b:57032

Grünbaum, Branko (with Shephard, G. C.) Polyhedra with transitivity properties. 85e:52009

(with Shephard, G. C.) Simplicial arrangements in projective 3-space. 85m:52007

Hanson, Howard G. Voronoi cell properties from simulated and real random spheres and points. 85c:52012

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- Hoekins, J. A. (with Street, Anne Penfold; Stanton, R. G.) Binary interlacement arrays, and how to find them. 85j:52015
- Ignatenko, V. F. Algebraic surfaces with symmetry group that of the polyhedron  $\Delta_{21}$ . (Russian) 85g:14063
- Kahn, J. (with Klawe, Maria; Kleitman, D. J.) Traditional galleries require fewer watchmen. 85g:52063a
- Klawe, Maria. See Kahn, J.; et al., 85g:52063a
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- Kühnel, W. (with Laumann, G.) The unique 3-neighborly 4-manifold with few vertices. 85e:57021
- Laumann, G. See Kühnel, W., 85e:57021
- Lučić, Zoran. Symmetries of regular four-dimensional polytopes. 85f:52020
- See also Welas, Asia Ivlić, 85j:52011
- Martini, Horst. Aussagen zum optimalen Kompositionslichtstrom regulärer und halbreulärer Polyeder. (English and Russian summaries) [Statements on the optimal composition light flux of regular and semiregular polyhedra] 85h:52008
- (with Weissbach, Bernulf) Zur besten Beleuchtung konvexer Polyeder. [On the best illumination of convex polyhedra] 85j:52017
- O'Rourke, Joseph. An alternate proof of the rectilinear art gallery theorem. 85g:52005b
- Pedersen, Jean. Geometry: the unity of theory and practice. 85j:52008
- Riley, Robert. Applications of a computer implementation of Poincaré's theorem on fundamental polyhedra. 85b:20064
- Robertson, S. A. Polyhedra and symmetry. 85j:52001
- Sah, Chih Han. Corrections to: "Scissors congruences. I. The Gauss-Bonnet map" [Math. Scand. 49 (1981), no. 2, 181-210 (1982); MR 84b:53062a]. 85b:53069
- Schoenberg, I. J. Self-reflecting skew polygons and polytopes in the 4-dimensional hypercube. 85f:52021
- Schulte, Egon. Reguläre Inzidenzkomplexe. II, III. (English summary) [Regular incidence complexes. II, III] 85d:51006
- Senéchal, Marjorie. Color symmetry and colored polyhedra. 85b:20068
- Shephard, G. C. See Grünbaum, Branko, 85e:52009 and 85m:52007
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- Székely, L. A. Measurable chromatic number of geometric graphs and sets without some distances in Euclidean space. 85m:52008
- Vince, Andrew. Regular combinatorial maps. 85i:05129
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- (with Lučić, Zoran) Regular polyhedra in hyperbolic three-space. 85j:52011
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- Weissbach, Bernulf. See Martini, Horst, 85j:52017
- Wenninger, Magnus J. ★ Dual models. 85f:52023
- Wills, J. M. Finite Platonian graphs. 85e:05095
- Wolny, Wolfgang. Contributions to Hilbert's eighteenth problem. 85g:52008
- Zhuk, I. K. Fundamental tetrahedra in Euclidean and Lobachevskii spaces. (Russian) 85f:52039

## 51M25 Length, area and volume [See also 26B15.]

- Klamkin, M. S. (with Meir, A.) Extensions of an elementary geometric inequality. 85h:51030
- Lichter, Jan. Some inequalities concerning the volume measure of  $n$ -dimensional parallelepipeds. (Russian and Polish summaries) 85h:51040
- Mathis, Frank H. (with Turner, Danny W.) Estimating the length of material wrapped around a cylindrical core. 85j:51023
- Meir, A. See Klamkin, M. S., 85h:51030
- Shiloto, J. Pado's triangle inequality and Hermitian forms. 85i:51030
- Stynes, Martin. Subdivision of simplexes—is bisection best? 85e:51030
- Turner, Danny W. See Mathis, Frank H., 85j:51023
- Zeitler, Herbert. Nochmals: die Sache mit den Möbiusbändern. [One more time: the thing about Möbius strips] 85e:51035

## secondary classifications (51M25)

- Bieri, H. (with Nef, W.) A sweep-plane algorithm for computing the volume of polyhedra represented in Boolean form. (German summary) 85h:52007
- Dubuc, Serge. Courbes de von Koch et courbes d'Osgood. [von Koch curves and Osgood curves] 85a:51016
- Fáry, István (with Makai, Endre, Jr.) Isoperimetry in variable metric. 85i:52003
- Jaritz, Renate. Über Kongruenzrelationen in Zerlegungsstrukturen. [On congruence relations in decomposition structures] 85a:00005
- Makai, Endre, Jr. See Fáry, István, 85i:52003
- Nef, W. See Bieri, H., 85h:52007

## 51M30 Line geometries and their generalizations

- Koźniewski, Edwin. See Matla, Roman, 85j:51024
- Matla, Roman (with Koźniewski, Edwin) On a polar complex. (Polish. English and Spanish summaries) 85j:51024
- Nits, Vilim. Über die mittels der Polarfelder bestimmten Nullräume. (Serbo-Croatian summary) [On zero spaces determined by means of polar fields] 85f:51023
- Sachs, Hans. Zur Statik des Flaggenraumes  $J_3^{(2)}$ . [On the statics of the flag space  $J_3^{(2)}$ ] 85k:51031
- Šćurč-Cudovan, Vlasta. Einige Eigenschaften des (VN) Komplexes eines  $(F_0^2)$  Büschels. (Serbo-Croatian summary) [Some properties of the (VN) complex of an  $(F_0^2)$  pencil] 85c:51036
- Weiss, Gunter. Zur euklidischen Liniengeometrie. IV. [On Euclidean line geometry. IV] 85d:51018

## 51M35 Synthetic treatment of fundamental manifolds in projective geometries (Grassmannians, Veronesians and their generalizations) [See also 14M15.]

- Buran, Werner. Grassmann manifolds  $G_{n,k}$  defined synthetically as projections of special Segre manifolds. (Italian) 85k:51033
- Melone, Nicola. Veronese spaces. 85j:51025

## secondary classifications (51M35)

- Massocca, Francesco (with Melone, Nicola) Caps and Veronese varieties in projective Galois spaces. 85i:51018
- Melone, Nicola. See Massocca, Francesco, 85i:51018
- Piccoletti, Lia Floravanti. Doubly striated varieties. (Italian. English summary) 85a:14028
- Šćurč-Cudovan, Vlasta. Einige Eigenschaften des (VN) Komplexes eines  $(F_0^2)$  Büschels. (Serbo-Croatian summary) [Some properties of the (VN) complex of an  $(F_0^2)$  pencil] 85c:51036

## 51Nxx Analytic and descriptive geometry

## secondary classifications (51Nxx)

- Gasson, Peter C. ★ Geometry of spatial forms. 85a:51001

## 51N05 Descriptive geometry

- Bohne, Erhart (with Martini, Horst) Extremalaussagen zum Kompositionslichtstrom von Konfigurationen ebener Flächen und konvexen Polyedern bei geometrischer Parallelbeleuchtung. [Extremal statements on the composition light flux of configurations of plane surfaces and convex polyhedra with geometric parallel illumination] 85i:51031
- (with Möller, Reinhard) Über isophotische Flächenstücke bei geometrischer Parallelbeleuchtung. [On isophotic surface patches with geometric parallel illumination] 85a:51021
- (with Münch, Mechthild) Beleuchtungsgebiete auf singulären Drehquadricken bei geometrischer Zentralbeleuchtung aus mehreren Lichtquellen. [Illumination areas on singular quadrics of revolution at geometric central illumination from several light sources] 85i:51032
- Ivanov, G. S. See Tevlin, A. M.; et al., 85e:51031
- Martini, Horst. See Bohne, Erhart, 85i:51031
- Mehta, M. L. Geometry of perspective. (Arabic summary) (Not in MR)
- Möller, Reinhard. See Bohne, Erhart, 85a:51021
- Münch, Mechthild. See Bohne, Erhart, 85i:51032
- Nartova, L. G. See Tevlin, A. M.; et al., 85e:51031
- Polosov, V. S. See Tevlin, A. M.; et al., 85e:51031
- Shuālec, Andrej. On perspective in  $n$ -space. 85k:51033a
- On the recognition of parallel manifolds during projection. 85k:51033b
- Tevlin, A. M. (with Ivanov, G. S.; Nartova, L. G.; Polosov, V. S.; Yakunin, V. I.) ★ Курс начертательной геометрии (на базе ЭВМ). (Russian) [A course in descriptive geometry (based on the computer)] 85e:51031
- Yakunin, V. I. See Tevlin, A. M.; et al., 85e:51031

## secondary classifications (51N05)

- Brauer, H. Zur Theorie linearer Abbildungen. [On the theory of linear mappings] 85h:51003
- Cardoso, Jayme Machado. ★ Uma generalização da homologia. (Portuguese) [A generalization of homology] 85a:51015
- Chang, Geng Zhe. Subdivision of the Bézier curve. 85a:65028
- Lu, Xin Long. The condition for equality between a spatial angle consisting of two oblique lines and its projective angle. (Chinese. English summary) 85d:51017
- Meincke, Eberhard. Isophoten auf windschiefen Regelflächen bei geometrischer Zentralbeleuchtung mit einem Bündel orientierter Lichtstrahlen. [Isophotes on skew ruled surfaces at geometric central illumination with a bundle of oriented light rays] 85j:53006
- Meirer, Klaus. Die windschiefen Flächen, deren Isophoten für eine Parallelbeleuchtung sämtlich eben oder Kegelsurven sind. [The skew surfaces whose isophotes for parallel illumination are all plane or conic curves] 85k:53013
- Sachs, Hans. Zur Statik des Flaggenraumes  $J_3^{(2)}$ . [On the statics of the flag space  $J_3^{(2)}$ ] 85k:51031
- Schreiber, Peter. Konstruktive Geometrie und Computergeometrie—zur Begriffsbildung und zur historischen Entwicklung. [Constructive geometry and computer geometry—on the definition of concepts and on historical development] (See 85j:68002)
- Testa, Antonio. ★ Una procedura interattiva per la rappresentazione prospettica di una superficie. (Italian) [An interactive procedure for the perspective representation of a surface] 85d:65015

## 51N10 Affine analytic geometry

- Coxeter, H. S. M. The affine aspect of Yaglom's Galilean Feuerbach. 85g:51013
- Liu, Ding Yuan. See Su, Bu Qing, 85a:51022
- Postolake, N. N. Symmetry transformations of a semi-Euclidean space  $R_3^{(1)}$ . (Russian) 85b:51041
- Su, Bu Qing (with Liu, Ding Yuan) An affine invariant theory and its application in computational geometry. 85a:51022

## 51N15 Projective analytic geometry

- Furinghetti, Fulvia** Pairs of point transformations between two projective planes. II. (Italian. English and French summaries) **85i:51033**
- Grosser, Siegfried K.** (with Herfort, W.) Ein explizites Modell der projektiven Ebene. [An explicit model of the projective plane] **85e:51032**
- Herfort, W.** See Grosser, Siegfried K. **85e:51032**
- Kargerová, Marie** Projective plane motions with straight trajectories. (Russian and Czech summaries) **85c:51037**

## secondary classifications (51N15)

- Albano, C.** Four-parameter subgroups of the triangular group of the projective space  $P_3$ . (Italian. French summary) **85g:53011a**
- D'Andrea, Antonina** (with Utano, Rosanna) Subgroups of one, two, and three parameters of the triangular group in the projective space  $P_3$ . (Italian) **85g:53011c**
- Greco, Angela** Five-parameter subgroups of the triangular group of the projective space  $P_3$ . (Italian. French summary) **85g:53011b**
- Meincke, Eberhard** Geometrical considerations for ruling over the distribution of intensity of illumination on a skew ruled surface. **85j:53007**
- Utano, Rosanna** See D'Andrea, Antonina. **85g:53011c**

## 51N20 Euclidean analytic geometry

- Barsotti, Leo** Note on conoids and limits. I. (Portuguese) **85f:51024**
- Bohne, Erhart** Spezielle ebene Kurven als Leitlinien isophotischer Zylinderstreifen. [Special plane curves as focal lines of isophotic cylindrical strips] **85b:51025**
- Bottema, Oene** On triangles  $ABC$  satisfying  $a^2 + b^2 + c^2 = kR^2$ . (Serbo-Croatian summary) **85g:51014**
- Feml, Stanimir** Über elementäre elliptische Kegeln. [On elementary elliptic cones] **85h:51042**
- Geise, Gerhard** (with Schreiber, Peter) Ein Peripheriewinkelsatz für Kardioiden nebst Anwendung in der geometrischen Fehlertheorie. [An angle of circumference theorem for cardioids and its application in geometric error theory] **85j:51026**
- Kavanau, J. Lee** ★ Structural equation geometry. **85k:51034**
- Kusak, Eugeniusz** (with Prażmowski, Krzysztof) The analytical geometry without coordinates. **85f:51025**
- Li, Lian Di** Domain functions and descriptions of diagrams. (Chinese) (Not in MR)
- MacDonnell, Joseph** A ruled Möbius band which self-intersects in a straight line. (Not in MR)
- Poh, K. S.** A short note on a Pedoe's theorem about two triangles. (Not in MR)
- Pottmann, Helmut** Höhere Spiraloide. [Higher spiraloids] **85e:51033**
- Prażmowski, Krzysztof** See Kusak, Eugeniusz. **85f:51025**
- Röschel, Otto** Bemerkungen zum Satz von Abramescu in der euklidischen und der isotropen Ebene. [Remarks on Abramescu's theorem on the Euclidean and isotropic plane] **85j:51027**
- Schreiber, Peter** See Geise, Gerhard. **85j:51026**

## secondary classifications (51N20)

- Bohne, Erhart** (with Möller, Reinhard) Über isophotische Flächenstücke bei geometrischer Parallelbeleuchtung. [On isophotic surface patches with geometric parallel illumination] **85a:51021**
- Bottema, Oene** (with Devidé, Vladimir) Einige merkwürdige Punkte im Dreieck. (Serbo-Croatian summary) [Some remarkable points in a triangle] **85b:51018**
- Devidé, Vladimir** See Bottema, Oene. **85b:51018**
- Massey, W. S.** Cross products of vectors in higher-dimensional Euclidean spaces. **85b:51038**
- Meirer, Klaus** Die windschiefen Flächen, deren Isophoten für eine Parallelbeleuchtung sämtlich eben oder Kegelsurven sind. [The skew surfaces whose isophotes for parallel illumination are all plane or conic curves] **85k:53013**
- Müller, Reinhard** See Bohne, Erhart. **85a:51021**
- Selleck, John H.** Powers of  $T$  and Soddy circles. **85f:11014**
- Weinberg, David A.** Canonical forms for symmetric tensors. **85b:18037**

## 51N25 Analytic geometry with other transformation groups

- Lang, Johann** ★ Zur isotropen Dreiecksgeometrie und zum Apollonischen Berührproblem in der isotropen Ebene. (German) [On the isotropic geometry of the triangle and the problem of Apollonius in the isotropic plane] **85b:51026**

## secondary classifications (51N25)

- Hatakeyama, Yoji** On generalized Laguerre transformations in Euclidean spaces. **85k:51008**

## 51N30 Geometry of classical groups [See also 20Gxx, 14Lxx.]

## secondary classifications (51N30)

- Dye, R. H.** Maximal subgroups of symplectic groups stabilizing spreads. **85b:20054**
- Eilers, E. W.** Projective collineations as products of homologies, elations, and projective reflections. **85f:51002**
- Löwen, Rainer** Compact projective planes with homogeneous ovals. **85j:51019**
- Völklein, Helmut** Fahrenttransitive lineare Gruppen mit diagonalisierbarer Standardgruppe. [Flag-transitive linear groups with diagonalizable isotropy groups] **85b:20068**

## 51N35 Questions of classical algebraic geometry [See also 14Nxx.]

- Degoll, Lando** Un théorème sur les systèmes linéaires de quadriques à jacobienne indéterminée. [A theorem on linear systems of quadrics with indeterminate Jacobian] **85a:51023**
- Golubina, L. V.** (with Gudkov, D. A.) Classification of sets of singular points of unicursal plane fifth-order curves. (Russian) **85h:51043**

**Gudkov, D. A.** See Golubina, L. V. **85h:51043**

- Naruki, Isao** Some invariants for conics and their applications. **85a:51024**
- Piccollella, Lia Floravanti** Multistriated manifolds. (Italian. English summary) **85e:51056**
- Stern, Ulrich** Berührungsvervollständigung für ebene Kurven dritter Ordnung. I. Die Punkt-Linien-Kurven dritter Ordnung und sechster Klasse. [Contact completion for plane curves of third order. I. The point-line curves of third order and sixth class] **85h:51044**

## secondary classifications (51N35)

- Akivis, M. A.** The local algebraizability condition for a system of submanifolds of a real projective space. (Russian) **85c:53018**
- Coxeter, H. S. M.** The twenty-seven lines on the cubic surface. **85b:14040**
- Degoll, Lando** Un théorème sur les systèmes linéaires de quadriques à Jacobienne indéterminée. [A theorem on linear systems of quadrics with indeterminate Jacobians] **85k:14025**
- Grochowaki, Bogusław** Many-fold points of the projection of order 4 of a plane algebraic curve of order  $n$ . **85i:14033**
- Grosser, Siegfried K.** (with Herfort, W.) An invariance property of algebraic curves in  $P^2(R)$ . **85j:14037**
- Herfort, W.** See Grosser, Siegfried K. **85j:14037**
- Molnari, Lorin** Point transformations and Segre varieties. (Italian. English summary) **85b:53014**
- Stratopoulos, George** A new line involution and the classification process. **85i:14034**

## 51N99 None of the above, but in this section

## secondary classifications (51N99)

- Rivara, Maria-Cecilia** Algorithms for refining triangular grids suitable for adaptive and multigrid techniques. **85h:65258**

## 52-XX CONVEX SETS AND RELATED GEOMETRIC TOPICS

## 52-01 Elementary exposition; textbooks

- Robertson, S. A.** Polyhedra and symmetry. **85j:52001**

## 52-02 Advanced exposition (research surveys, monographs, etc.)

- Chakerian, G. D.** (with Groemer, H.) Convex bodies of constant width. **85f:52001**
- Groemer, H.** See Chakerian, G. D. **85f:52001**
- Gruber, Peter M.** Approximation of convex bodies. **85d:52001**
- Seven small pearls from convexity. **85h:52001**
- McMullen, Peter** (with Schneider, Rolf) Valuations on convex bodies. **85e:52001**
- Moser, William** See Research problems in discrete geometry. **85h:52002**
- Schneider, Rolf** See McMullen, Peter. **85e:52001**

## secondary classifications (52-02)

- Bandle, Catherine** Isoperimetric inequalities. **85f:52029**

## 52-03 Historical (must also be assigned at least one classification number from Section 01)

- Fenchel, W.** Convexity through the ages. **85c:52001**

## secondary classifications (52-03)

- Danilova, N. I.** Development of elementary geometric methods of solution of the fundamental isoperimetric problem in the 19th century. (Ukrainian. Russian summary) **85b:01020**

## 52-04 Explicit machine computation and programs (not the theory of computation or programming)

## secondary classifications (52-04)

- Akl, Selim G.** Optimal parallel algorithms for computing convex hulls and for sorting. (German summary) **85h:68076**
- Allison, D. C. S.** (with Noga, M. T.) Some performance tests of convex hull algorithms. **85h:68077**
- Bieri, H.** (with Nef, W.) A sweep-plane algorithm for computing the volume of polyhedra represented in Boolean form. (German summary) **85h:52007**
- Chaselle, Bernard** A theorem on polygon cutting with applications. (See **85k:68007**)
- An improved algorithm for the fixed-radius neighbor problem. **85m:68032**
- Convex partitions of polyhedra: a lower bound and worst-case optimal algorithm. **85f:68069**
- Chin, Francis Y.** (with Wang, Cao An) Minimum vertex distance between separable convex polygons. **85f:68090**
- Edelebrunner, H.** A new approach to rectangle intersections. I, II. **85e:68093**
- Graham, Ronald L.** (with Yao, F. Frances) Finding the convex hull of a simple polygon. **85f:68091**
- Hertel, Elke** Zur computergerechten Beschreibung von Polygonen und Polyedern. [On the computer-suited description of polygons and polyhedra] (See **85j:68002**)
- Hoskins, J. A.** (with Hoskins, W. D.) A faster algorithm for factoring binary matrices. **85c:05011**
- Hoskins, W. D.** See Hoskins, J. A. **85c:05011**
- Huang, Wen Qi** See Zhan, Shu Hao. **85a:06026**
- Lee, Der Taal** On finding the convex hull of a simple polygon. **85a:68109**
- An optimal time and minimal space algorithm for rectangle intersection problems. **85j:68104**

- Mu, Yu Jie Computer construction of the convex hull of finite plane point sets. (Chinese. English summary) **85b:60060**
- Nef, W. See Bieri, H., **85h:52007**
- Noga, M. T. See Allison, D. C. S., **85h:60077**
- Ogawa, Tetsuro See Tanomura, Masaharu; et al., **85g:52007**
- Ogita, Naofumi See Tanomura, Masaharu; et al., **85g:52007**
- Sugihara, Kikichi An  $\log n$  algorithm for determining the congruity of polyhedra. **85k:68095**
- Tanomura, Masaharu (with Ogawa, Tetsuro; Ogita, Naofumi) A new algorithm for three-dimensional Voronoi tessellation. **85g:52007**
- Toussaint, G. T. An optimal algorithm for computing the minimum vertex distance between two crossing convex polygons. (See **85g:52001**)
- Computing largest empty circles with location constraints. **85f:68093**
- Wang, Cao An See Chin, Francis Y., **85f:60090**
- Yao, F. Frances See Graham, Ronald L., **85f:60091**
- Zhao, Shu Hao (with Huang, Wen Qi) Computer aided design for the problem of geometric distribution. (Chinese. English summary) **85a:65036**

## 52A01 Axiomatic and generalized convexity

- Degroof, Eric (with Fourneau, R.) Ghuings and closures. **85f:52002**
- Fourneau, R. See Degroof, Eric, **85f:52002**
- Johnson, Gordon G.  $G$ -systems. **85c:52003**
- Marcus, Daniel A. Normal semimodules: a theory of generalized convex cones. **85f:52003**
- Rubinfeld, G. Sh. Geometry of convex sets in affine and projective spaces. (Russian) **85k:52001**
- Shapkin, I. V. Binary intersection of convex sets. (Russian) **85k:52002**
- van de Val, M. Dimension of convex hyperspaces: nonmetric case. **85f:52004**
- Pseudoboundaries and pseudo-interiors for topological convexities. **85c:52003**
- On the rank of a topological convexity. **85b:52001**
- Euclidean convexity cannot be compactified. **85c:52003**
- Dimension of convex hyperspaces. **85j:52002**
- Binary convexities and distributive lattices. **85c:52004a**
- Dimension of binary convex structures. **85c:52004b**

### secondary classifications (52A01)

- Boland, Jan Ch. See Sierkema, Gerard, **85c:52016**
- Ovchinnikov, S. V. Convex geometry and group choice. **85g:90016**
- Petty, Dix H. (with Rodabaugh, S. E.) Segments in strongly convex metric spaces. **85a:54035**
- Rodabaugh, S. E. See Petty, Dix H., **85a:54035**
- Sierkema, Gerard (with Boland, Jan Ch.) On Eckhoff's conjecture for Radon numbers; or how far the proof is still away. **85c:52016**
- van de Val, M. Matching binary convexities. **85c:52036**

## 52A05 Convex sets without dimension restrictions

- Bair, Jacques Critères de fermeture pour l'enveloppe convexe d'une réunion. [Closure criteria for the convex envelope of a union] **85a:52001**
- (with Jongmans, F.) Further results on the asymptotic cone. **85f:52005**
- Coquet, G. (with Dupin, J. C.) Sommes de convexes linéairement compacts. [Sums of linearly compact convex sets] **85a:52002**
- Dupin, J. C. See Coquet, G., **85a:52002**
- Hilrichsen, D. (with Krause, U.) Unique representation in convex sets by extraction of marked components. **85c:52005**
- Jongmans, F. See Bair, Jacques, **85f:52005**
- Krause, U. See Hilrichsen, D., **85c:52005**
- Lupaş, Liana Separation of strong convex sets. (See **85g:00019**)
- Sterna-Karwat, Alicja A note on additive convex processes. **85h:52003**

### secondary classifications (52A05)

- Borwein, J. M. On the existence of Pareto efficient points. **85f:90083**
- Chepoi, V. D. See Soltan, V. P., **85a:05078**
- Rogers, Colin Lattices in Banach spaces. **85f:52037**
- Soltan, V. P.  $d$ -convexity in graphs. (Russian) **85a:05077**
- (with Chepoi, V. D.) Some classes of  $d$ -convex functions in a graph. (Russian) **85a:05078**
- Tan, Kok Keong A generalization of a theorem of Routh. **85k:40019**

## 52A07 Convex sets in topological vector spaces [See also 46A55.]

- Fujihira, Hideyuki Linear extensions of convex subsets. **85b:52002**

### secondary classifications (52A07)

- Bakhtin, V. I. (with Nguyễn Bích Duy; Popova, T. I.) On the geometry of minihedral cones. (Russian) **85j:46032**
- Fan, Ky Some properties of convex sets related to fixed point theorems. **85i:47000**
- Fazlyov, V. R. A general method of finding a point in a convex set. (Russian) **85g:40029**
- Meyer zu Hörste, Ulrich Topological proper separation theorems. **85b:46013**
- Nanda, Sudarsan A remark on "A nonlinear complementarity problem in semi-inner-product space" [Rend. Mat. (7) 2 (1982), no. 1, 167-171; MR 83j:47055]. (Italian summary) **85a:47115**
- Nehse, R. Zu einem Trennungssatz von Dragomirescu. [On a separation theorem of Dragomirescu] **85k:90120**
- Nguyễn Bích Duy See Bakhtin, V. I.; et al., **85j:46032**
- Papini, Pier Luigi Minimal and closest points, nonexpansive and quasiconvex retractions in real Banach spaces. **85g:46022**
- Phelps, R. R. Convexity in Banach spaces: some recent results. **85b:46026**
- Popova, T. I. See Bakhtin, V. I.; et al., **85j:46032**

- Roth, Walter Zusammenhänge zwischen der Oszillation affiner Funktionen und Durchmesserseigenschaften konvexer Mengen. [Connections between the oscillation of affine functions and the diameter properties of convex sets] **85b:40006**
- Ye, Yi Ning Packing spheres in Orlicz sequence spaces. (Chinese) **85i:46015**

## 52A10 Convex sets in 2 dimensions

- Blatter, Christian Über Kurven konstanter Breite. [On curves of constant breadth] (Not in MR)
- Falconer, K. J. Hammer's X-ray problem and the stable manifold theorem. **85g:52011b**
- X-ray problems for point sources. **85g:52001a**
- Gao, Ji The extreme value of the uniform degree of the unit ball in a Banach space. (Chinese. English summary) **85c:52006**
- Gardner, R. J. Symmetrals and X-rays of planar convex bodies. **85c:52007**
- Georgiev, P. G. Approximation of convex  $n$ -gons by  $(n-1)$ -gons. (Bulgarian. English summary) **85m:52001**
- Goodey, P. R. Intersections of planar convex curves. **85f:52006**
- Horton, J. D. Sets with no empty convex 7-gons. **85f:52007**
- Letac, Gérard Mesures sur le cercle et convexes du plan. [Measures on the circle and convex sets in the plane] **85j:52003**
- Meyerson, Mark D. Remarks on Fenn's "the table theorem" and Zaks' "the chair theorem". **85c:52008**
- Shan, Zun A new proof for a theorem on the convexity of planar Bézier curves. (Chinese. English summary) **85f:52008**

### secondary classifications (52A10)

- Bloch, Ethan D. (with Connelly, Robert; Henderson, David W.) The space of simplexwise linear homeomorphisms of a convex 2-disk. **85m:57005**
- Brügger, G. Three-triangle-tangram. **85b:51037**
- Connelly, Robert See Bloch, Ethan D.; et al., **85m:57005**
- Gage, Michael E. Curve shortening makes convex curves circular. **85i:52004**
- Graham, Ronald L. (with Yao, F. Frances) Finding the convex hull of a simple polygon. **85f:60091**
- Groemer, H. Some remarks on translative coverings of convex domains by strips. **85i:52009**
- Henderson, David W. See Bloch, Ethan D.; et al., **85m:57005**
- Kuperberg, W. On minimum area quadrilaterals and triangles circumscribed about convex plane regions. **85a:52009**
- Ottmann, Thomas (with Soisalon-Soininen, Elias; Wood, Derick) On the definition and computation of rectilinear convex hulls. **85j:68105**
- Soisalon-Soininen, Elias See Ottmann, Thomas; et al., **85j:68105**
- Wood, Derick See Ottmann, Thomas; et al., **85j:68105**
- Yao, F. Frances See Graham, Ronald L., **85f:60091**

## 52A15 Convex sets in 3 dimensions

- Böhme, Th. (with Zernitz, H.) Zur Konstruktion stabiler Mengen von konvexen Bereichen im 3-dimensionalen euklidischen Raum. [On the construction of stable sets of convex regions in the three-dimensional Euclidean space] **85m:52002**
- Zernitz, H. See Böhme, Th., **85m:52002**

### secondary classifications (52A15)

- Blair, D. E. (with Wilker, J. B.) When does inversion preserve convexity? **85a:53004**
- Wilker, J. B. See Blair, D. E., **85a:53004**

## 52A20 Convex sets in $n$ dimensions

- Bair, Jacques Liens entre le cône d'ouverture interne et l'intérieur du cône asymptotique d'un convexe. [Relations between the inner aperture cone and the "internal" of the asymptotic cone of a convex set] **85f:52009**
- (with Jongmans, F.) Relations entre l'enveloppe conique, le cône d'infinitude et la gaine d'un ensemble convexe. [Relations between the conical envelope, the infinity cone and the sheath of a convex set] **85a:52003**
- (with Jongmans, F.) Sur l'énigme de l'enveloppe conique fermée. [On the enigma of the closed conical hull] **85h:52004**
- Quelques questions soulevées par le cône barrière d'un convexe. [Some questions raised by the boundary cone of a convex set] **85f:52010**
- Burmeister, Wolfgang (with Schmidt, Jochen W.) Über Kegel in endlichdimensionalen Räumen. [On cones in finite-dimensional spaces] **85c:52009**
- Coquet, G. (with Dupin, J. C.; Fourneau, R.) Les  $(e_1, \dots, e_q)$ -convexes de  $\mathbb{R}^n$ ; la propriété d'intersection et les filtres maximaux de convexes.  $\{(e_1, \dots, e_q)$ -convex sets in  $\mathbb{R}^n$ ; the intersection property and maximal filters of convex sets] **85j:52004**
- De Wilde, M. Some properties of the exposed points of finite-dimensional convex sets. **85f:52011**
- Dovbysh, L. N. Quadratic mappings of a special type. (Russian. English summary) **85b:52003**
- Dupin, J. C. See Coquet, G.; et al., **85j:52004**
- Falconer, K. J. Applications of a result on spherical integration to the theory of convex sets. **85f:52012**
- Fourneau, R. See Coquet, G.; et al., **85j:52004**
- Gurarii, V. I. (with Levental', V. Ts.) Theorem on polyhedral cones. (Russian) **85h:52005**
- Ivanov, Emil H. (with Willöper, J.) Über die Existenz eigentlich effizienter Punkte abgeschlossener konvexer Mengen. [On the existence of proper efficient points of closed convex sets] **85f:52013**
- Jongmans, F. Enquête socio-géométrique sur les vertus de l'ignorance. [Sociogeometric inquiry into the virtues of ignorance] **85a:52004**
- See also Bair, Jacques, **85a:52003** and **85h:52004**
- Kallay, Michael Finite sets which contain their Radon points. **85j:52005**



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- Balas, Egon (with Zemel, Eitan) Lifting and complementing yields all the facets of positive zero-one programming polytopes. **85f:90075**
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- Bender, Edward A. (with Richmond, L. B.) The asymptotic enumeration of rooted convex polyhedra. **85m:05004**
- Böhme, Th. (with Zernits, H.) Zur Konstruktion stabiler Mengen von konvexen Bereichen im 3-dimensionalen euklidischen Raum. [On the construction of stable sets of convex regions in the three-dimensional Euclidean space] **85m:52002**
- Caciaro, B. See Amici, O., **85j:55030**
- Edelman, Paul H. The acyclic sets of an oriented matroid. **85d:05000**  
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- Emelichev, V. A. (with Kravtsov, M. K.) Transport polytopes. (Russian) **85j:90028**  
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- Ernst, M. H. See Hendriks, E. M.; et al., **85c:82052**
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- Grünbaum, Branko (with Mani-Levitzka, Peter; Shephard, G. C.) Tiling three-dimensional space with polyhedral tiles of a given isomorphism type. **85e:52022**  
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- Hughes Jones, R. Folding polyhedra. **85b:51023**
- Ignatenko, V. F. Algebraic surfaces with symmetry group that of the polyhedron  $4_{21}$ . (Russian) **85g:14053**
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- Jendroľ, Stanislav (with Jucovič, E.) On face-vectors of maps with constant weight of edges. **85i:05090**
- Jucovič, E. See Jendroľ, Stanislav, **85i:05090**
- Kortanek, K. O. (with Ströjwas, H. M.) On extreme points of bounded sets of generalized finite sequence spaces. (German summary) **85a:90228**
- Kovalev, M. M. See Emelichev, V. A.; et al., **85b:52008**
- Kravtsov, M. K. See Emelichev, V. A.; et al., **85b:52008** and **85j:90028**
- Kühnel, W. (with Lassmann, G.) The unique 3-neighborly 4-manifold with few vertices. **85e:57021**
- Laborde, Jean-Marie Charakterisierungen des Hyperwürfels. [Characterizations of the hypercube] **85h:05008**
- Lassmann, G. See Kühnel, W., **85e:57021**
- (Lawden, G. H.) See Emelichev, V. A.; et al., **85b:52008**
- Levental, V. T. Mutual arrangement of polyhedral cones and related properties of symmetric matrices. (Russian) **85j:52006**
- Mani-Levitzka, Peter See Grünbaum, Branko; et al., **85e:52022**
- Marcus, Daniel A. Gale diagrams of convex polytopes and positive spanning sets of vectors. **85j:52016**
- Martini, Horst (with Weisbach, Bernulf) Zur besten Beleuchtung konvexer Polyeder. [On the best illumination of convex polyhedra] **85j:52017**
- McInnes, J. A. See Hoare, M. R., **85b:81237**
- McMullen, Peter Volumes of projections of unit cubes. **85j:52019**
- Nelson, David R. (with Widom, Michael) Symmetry, Landau theory and polytope models of glass. **85j:82041**
- Petz, S. See Zaremba, L. S., **85b:05150**
- Richmond, L. B. See Bender, Edward A., **85m:05004**
- Robertson, S. A. Polyhedra and symmetry. **85j:52001**
- Rosenfeld, Moshe Are all simple 4-polytopes Hamiltonian? **85d:05104**
- Schneider, Rolf (with Weil, Wolfgang) Zonoids and related topics. **85e:52010**
- Schulte, Egon Reguläre Inzidenzkomplexe. II, III. (English summary) [Regular incidence complexes. II, III] **85d:51006**
- Tiling three-space by combinatorially equivalent convex polytopes. **85i:52010**
- Shephard, G. C. See Grünbaum, Branko; et al., **85e:52022** and **85m:52007**
- Sierkma, Gerard (with de Vos, Klaas) Convex polytopes as matrix invariants. **85k:15017**
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- Sugihara, Kōkichi An algebraic and combinatorial approach to the analysis of line drawings of polyhedra. **85h:68081**
- Vanden Cruyce, Patricia A convexity problem in 3-polytopal graphs. **85i:05101**  
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- de Vos, Klaas See Sierkma, Gerard, **85k:15017**
- Weil, Wolfgang See Schneider, Rolf, **85e:52010**
- Weisbach, Bernulf See Martini, Horst, **85j:52017**
- Whiteley, Walter Cones, infinity and 1-story buildings. **85h:51032**
- Widom, Michael See Nelson, David R., **85j:82041**
- Wills, J. M. Reguläre polyedrische Mannigfaltigkeiten. [Regular polyhedral manifolds] **85h:57022**
- Yang, Lu (with Zhang, Jing Zhong) On a conjecture of R. Alexander. (Chinese) (Not in MR)  
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- Yuzin, B. V. A combinatorial formula for the normal Euler class of a lattice 2-manifold in 4-space. **85k:57025**
- Zaka, Joseph Shortness coefficient of cyclically 5-connected cubic planar graphs. **85d:05187**
- Zaremba, L. S. (with Petz, S.) On a geometric property of perfect graphs. **85b:05150**
- Zemel, Eitan See Balas, Egon, **85f:90075**
- Zernits, H. See Böhme, Th., **85m:52002**
- Zhang, Jing Zhong See Yang, Lu, **85e:52019** and (Not in MR)
- Ziff, R. M. See Hendriks, E. M.; et al., **85c:82052**
- 52A30 Invariants of convex sets (star-shaped,  $(m, n)$ -convex, etc.)
- Boland, Jan Ch. See Sierkma, Gerard, **85c:52016**
- Breen, Marilyn Points of local nonconvexity, clear visibility, and star-shaped sets in  $\mathbb{R}^d$ . **85h:52011**  
An improved Krasnosel'skii theorem for nonclosed sets in the plane. **85h:52012**
- Campi, Stefano On the reconstruction of a star-shaped body from its "half-volumes". **85h:52006**
- Sierkma, Gerard (with Boland, Jan Ch.) On Eckhoff's conjecture for Radon numbers; or how far the proof is still away. **85c:52016**
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- Zurkowiak, V. D. See Toranos, F. A., **85e:52017**
- 52A35 Helly-type theorems
- Duchet, P. (with Meyniel, H.) Ensemble convexe dans les graphes. I. Théorèmes de Helly et de Radon pour graphes et surfaces. (English summary) [Convex sets in graphs. I. Helly and Radon theorems for graphs and surfaces] **85c:52017**
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- Alexander, Ralph The circumdisk and its relation to a theorem of Kirszbraun and Valentine. **85f:52028**
- Gajić, Ljiljana See Hadžić, Olga, **85e:47080**
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- Stavrakas, N. Krasnosel'skii theorems for nonseparating compact sets. **85g:52002**
- 52A37 Other problems of combinatorial geometry
- Avis, David The number of furthest neighbour pairs of a finite planar set. **85j:52012**
- Bannai, Eichi (with Bannai, Etsuko; Stanton, Dennis) An upper bound for the cardinality of an  $s$ -distance subset in real Euclidean space. II. **85e:52013**  
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- Beck, Josef On the lattice property of the plane and some problems of Dirac, Motzkin and Erdős in combinatorial geometry. **85j:52013**
- Blokhuis, A. See Bannai, Eichi; et al., **85m:52006**
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 (Leichtweis, K.) See Blaschke, Wilhelm, 85j:01034  
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## 53-01 Elementary exposition; textbooks

- Beju, I. (with Soós, E.; Teodorescu, P. P.) ★ Euclidean tensor calculus with applications. 85f:53001a  
 (with Soós, E.; Teodorescu, P. P.) ★ Spinor and non-Euclidean tensor calculus with applications. 85f:53001b

- Bel'ko, I. V. (with Burdun, A. A.; Vedernikov, V. I.; Fedenko, A. S.) ★ *Дифференциальная геометрия.* (Russian) [Differential geometry] 85a:53001  
 Burdun, A. A. See Bel'ko, I. V.; et al., 85a:53001  
 (Burns, R. G.) See Dubrovin, B. A.; et al., 85a:53003  
 do Carmo, Manfredo P. ★ *Differentialgeometrie von Kurven und Flächen.* (German) [Differential geometry of curves and surfaces] 85a:53002  
 Cartan, Élie ★ *Geometry of Riemannian spaces.* 85m:53001  
 (Chern, Shing Shen) See Hopf, Heinz, 85b:53001  
 Dubrovin, B. A. (with Fomenko, A. T.; Novikov, S. P.) ★ *Modern geometry—methods and applications.* Part I. 85a:53003  
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 (Glashbrook, J. F.) See Cartan, Élie, 85m:53001  
 (Gray, John W.) See Hopf, Heinz, 85b:53001  
 (Grüter, Michael) See do Carmo, Manfredo P., 85a:53002  
 (Hermann, Robert) See Cartan, Élie, 85m:53001  
 Hopf, Heinz ★ *Differential geometry in the large.* 85b:53001  
 Huang, Jing Zhi See Mei, Xiang Ming, 85c:53001  
 (Lax, Peter D.) See Hopf, Heinz, 85b:53001  
 Lehmann, Daniel ★ *Géométrie et topologie des surfaces.* (French) [Geometry and topology of surfaces] 85i:53001  
 Mei, Xiang Ming (with Huang, Jing Zhi) ★ *Weifen jibe.* (Chinese) [Differential geometry] 85c:53001  
 Novikov, S. P. See Dubrovin, B. A.; et al., 85a:53003  
 O'Neill, Barrett ★ *Semi-Riemannian geometry.* 85f:53002  
 Pogorelov, A. V. ★ *Alhindusag alafdayaq.* (Arabic) [Differential geometry] 85h:53001  
 (Sacré, Carlos) See Lehmann, Daniel, 85i:53001  
 (Samuel, Joseph) See Beju, I.; et al., 85f:53001a and 85f:53001b  
 Soós, E. See Beju, I.; et al., 85f:53001a and 85f:53001b  
 Teodorescu, P. P. See Beju, I.; et al., 85f:53001a and 85f:53001b  
 Vedernikov, V. I. See Bel'ko, I. V.; et al., 85a:53001

## secondary classifications (53-01)

- Lié, Morilla, A. ★ *Tensores cartesianos y sus aplicaciones.* (Spanish) [Cartesian tensors and their applications] 85a:53016  
 Su, Bu Qing ★ *Affine differential geometry.* 85g:53010

## 53-02 Advanced exposition (research surveys, monographs, etc.)

- Kobayashi, Osamu *Complements to surveys in geometry (1981/1982).* (Japanese) (Not in MR)  
 Salamon, S. M. *Topics in four-dimensional Riemannian geometry.* 85i:53002  
 secondary classifications (53-02)  
 Aubin, Thierry ★ *Nonlinear analysis on manifolds. Monge-Ampère equations.* 85j:58002  
 Crăloveanu, M. (with Puta, Mircea) ★ *Introducere in geometria spectrală.* (Romanian) [Introduction to spectral geometry] 85m:58002  
 Gromov, Mikhail ★ *Structures métriques pour les variétés riemanniennes.* (French) [Metric structures for Riemann manifolds] 85e:53051  
 (Lafontaine, Jacques) See Gromov, Mikhail, 85e:53051  
 Lichnerowicz, André *Géométrie et physique.* [Geometry and physics] (See 85k:83002)  
 (Ransou, Pierre) See Gromov, Mikhail, 85e:53051  
 Puta, Mircea See Crăloveanu, M., 85m:58002  
 Wu, Hung Hai *The Bochner technique.* 85m:53044a  
 The Bochner technique in differential geometry. II. (Chinese) 85m:53044b

## 53-03 Historical (must also be assigned at least one classification number from Section 01)

- Marcus, Froim *On the metrics of G. Fubini.* 85g:53001

## secondary classifications (53-03)

- Aminov, Yu. A. (with Slobodan, Yu. S.) *Differential geometry.* (Russian) (See 85g:01004)  
 Bukhshtaber, V. M. (with Gindikin, S. G.) *From Cavalieri's principle to the tomograph.* (Bulgarian) 85e:01032  
 Cartan, Élie ★ *Œuvres complètes. Partie III. Vol. 1.* (French) [Complete works. Part III. Vol. 1] 85g:01032c  
 ★ *Œuvres complètes. Partie III. Vol. 2.* (French) [Complete works. Part III. Vol. 2] 85g:01032d  
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 Kobayashi, Shoshichi *The work of Shing Tung Yau.* (Japanese) 85c:01054  
 (Penkov, I.) See Bukhshtaber, V. M., 85e:01032  
 Posnyak, É. G. *Geometry in the large.* (Russian) (See 85g:01004)  
 Reventós, Agustí *From Riemann to the present.* (Catalan) 85m:01050  
 (Riemann, Georg Friedrich Bernhard) See Zund, J. D., 85f:01020  
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 (Whitehead, J. H. C.) See Cartan, Élie, 85g:01032d  
 (Yau, Shing Tung) See Kobayashi, Shoshichi, 85c:01054  
 Zumpfer, Günter *Zur Entwicklung der Flächenträgerwerke.* [On the development of two-dimensional structures] (Not in MR)  
 Zund, J. D. *Some comments on Riemann's contributions to differential geometry.* 85f:01020

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Cartan, Élie See Cartan, Élie, 85g:01033d

## Biography:

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## 53-04 Explicit machine computation and programs (not the theory of computation or programming)

Greenspan, D. Computer-oriented, n-body modelling of minimal surfaces. 85k:53001  
 Wu, Wen Jun Mechanical theorem proving in elementary geometry and differential geometry. 85e:53001

secondary classifications (53-04)

Coppin, C. (with Greenspan, D.) Discrete modeling of minimal surfaces. 85b:49002

Greenspan, D. See Coppin, C., 85b:49002

## 53-06 Proceedings, conferences, etc.

(Chavel, Isaac) See Differential geometry and complex analysis, 85k:53002

(Farkas, H. M.) See Differential geometry and complex analysis, 85k:53002

(Hitchin, N. J.) See Global Riemannian geometry, 85g:53003

(Hsiung, Chuan Chih) See Mathematical essays, 85g:53004

(Kemmotau, K.) See Differential geometry of submanifolds, 85j:53001

(Kowalski, Oldrich) See Proceedings: Conference on differential geometry and its applications, 85k:53004

(Naveira, A. M.) See Differential geometry, 85d:53001

(Ostianu, N. M.) See Problems in geometry, 85c:53002 and Problems of geometry, 85k:53003

(Rauch, Harry E.) See Differential geometry and complex analysis, 85k:53002

(Sachs, Hans) See Colloquium: Austrian geometry, 85m:53002

(Shiohama, Katsuhiko) See Geometry of geodesics and related topics, 85g:53002

(Su, Bu Qing) See Mathematical essays, 85g:53004

(Verner, A. L.) See Global and Riemann geometry, 85f:53003 and Questions of differential geometry "in the large", 85g:53005

(Willmore, T. J.) See Global Riemannian geometry, 85g:53003

## Birthday:

Su, Bu Qing ★ Mathematical essays, 85g:53004

## Colloquium:

Austrian geometry ★ Zweites Österreichisches Geometrie-Kolloquium in Rein. (German) [Second Austrian geometry colloquium in Rein] 85m:53002

## Conference:

Differential geometry and its applications ★ Proceedings of the conference on differential geometry and its applications. Part 1. 85k:53004

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Geometry of geodesics and related topics ★ Geometry of geodesics and related topics. 85g:53002

Global and Riemann geometry ★ Глобальная и риманова геометрия. (Russian) [Global and Riemann geometry] 85f:53003

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Itogi Nauki i Tekhniki ★ Проблемы геометрии. Том 15. (Russian) [Problems in geometry. Vol. 15] 85c:53002

Kyoto ★ Differential geometry of submanifolds, 85j:53001

Mathematical essays ★ Mathematical essays, 85g:53004

Nové Město na Moravě ★ Proceedings of the conference on differential geometry and its applications. Part 1. 85k:53004

Peñíscola ★ Differential geometry, 85d:53001

Problems in geometry ★ Проблемы геометрии. Том 15. (Russian) [Problems in geometry. Vol. 15] 85c:53002

Problems of geometry ★ Проблемы геометрии. Том 16. (Russian) [Problems of geometry. Vol. 16] 85k:53003

## Proceedings:

Conference on differential geometry and its applications ★ Proceedings of the conference on differential geometry and its applications. Part 1. 85k:53004

Questions of differential geometry "in the large" ★ Вопросы дифференциальной геометрии "в целом". (Russian) [Questions of differential geometry "in the large"] 85g:53005

Rein ★ Zweites Österreichisches Geometrie-Kolloquium in Rein. (German) [Second Austrian geometry colloquium in Rein] 85m:53002

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Global Riemannian geometry ★ Global Riemannian geometry, 85g:53003

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(Desolieux-Mouille, N.) See Seminar: South Rhone, geometry, 85g:58010a

(Pál, Á.) See Proceedings: National colloquium on geometry and topology, 85k:00011a

(Radó, F.) See Proceedings: National colloquium on geometry and topology, 85k:00011a

(Tarján, M.) See Proceedings: National colloquium on geometry and topology, 85k:00011a

Cluj-Napoca ★ Proceedings of the national colloquium on geometry and topology, 85k:00011a

## Colloquium:

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## Proceedings:

National colloquium on geometry and topology ★ Proceedings of the national colloquium on geometry and topology, 85k:00011a

## Seminar:

South Rhone, geometry ★ Séminaire sud-rhodanien de géométrie. I. (French) [South Rhone seminar on geometry. I] 85g:58010a

Tîrgu-Mureș ★ Proceedings of the national colloquium on geometry and topology, 85k:00011a

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## 53A04 Curves in Euclidean space

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Blair, D. E. (with Wilker, J. B.) When does inversion preserve convexity? 85a:53004

Drobot, V. Approximation of curves by polygons. 85f:53004

Eves, Howard Skew curves setting up a null system in space. (See 85i:00007)

Molnár, G. S. On some questions concerning the differential geometry of curves in n-dimensional Euclidean spaces. 85f:53005

Pottmann, Helmut Zwei Verallgemeinerungen der Böschungslinien. [Two generalizations of slope lines] 85a:53005

Pripose, Gabriel Sur les courbes de Taitzéica. [On Taitzéica curves] 85m:53003

Ryutin, V. R. Normal congruences of nth order parabolas. (Russian) 85c:53004

Sasal, Takao The fundamental theorem of analytic space curves and apparent singularities of Fuchsian differential equations. 85j:53002

Weiss, Gunter Die Kurven mit ähnlichen Schmiegkegelschnitten. [Curves with similar osculating conics] 85k:53005

Wilker, J. B. See Blair, D. E., 85a:53004

Yang, Lu (with Zhang, Jing Zhong) The Johnson conjecture on space curves. (Chinese) (Not in MR)

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secondary classifications (53A04)

David, J. M. S. Projection-generic curves. 85h:58025

Douady, Adrian Neuds et structures de contact en dimension 3 (d'après Daniel Bennequin). [Knots and contact structures in dimension 3 (after Daniel Bennequin)] 85c:58086

Fidal, D. L. (with Giblin, P. J.) Generic 1-parameter families of caustics by reflexion in the plane. 85m:58035

Gage, Michael E. An isoperimetric inequality with applications to curve shortening. 85d:52007

Giblin, P. J. See Fidal, D. L., 85m:58035

Kovalev, V. A. (with Shilova, G. I.; Shuvaev, N. A.) An extremal problem in a class of plane curves. (Russian) 85e:52018

Pottmann, Helmut Höhere Spiraloïden. [Higher spiraloids] 85e:51033

Servadio, Sergio Geometrical characterisation of asymptotic wavefronts in N-body scattering. 85e:53004

Shcherbak, O. P. Singularities of a family of evolvents in the neighborhood of a point of inflection of a curve and the reflection group  $H_3$ . (Russian) 85j:58031

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## 53A05 Surfaces in Euclidean space

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Beckenbach, E. F. A global formula for conformal maps on surfaces. 85j:53003

Chen, Zu Chi (with Qian, Chun Lin) The generalized sine-Gordon equations and their geometric aspects. 85j:53004

Firsov, A. I. Decompositions of a Euclidean space generated by a surface given in it. (Russian) 85j:53005

Glering, Oswald Regelflächen mit sphärischen Kehlkurven. [Ruled surfaces with spherical lines of striction] 85a:53006

Gonzalo, J. (with Varela, F.) Some surfaces that are distinguishable by the global expression of their volume elements. 85f:53006

Gutiérrez, Carlos (with Sotomayor, J.) An approximation theorem for immersions with stable configurations of lines of principal curvature. 85b:53002

Gvasava, D. K. The Cauchy problem for an equation of surface theory. (Russian. English and Lithuanian summaries) 85e:53002

Kim, V. S. Unique determination of two-dimensional surfaces in a Euclidean space. (Russian) (See 85g:53005)

Kovalev, V. A. Characteristic functionals and mathematical construction of surfaces. (Russian) 85h:53002

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Langer, Joel (with Singer, David) Curves in the hyperbolic plane and mean curvature of tori in 3-space. 85k:53006

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Masal'tsev, L. A. Helicoidal surfaces in the Euclidean space  $E^m$ . (Russian) 85e:53003



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Meincke, Eberhard Isophoten auf windschiefen Regelflächen bei geometrischer Zentralbeleuchtung mit einem Bündel orientierter Lichtstrahlen. [Isophotes on skew ruled surfaces at geometric central illumination with a bundle of oriented light rays] 85j:53006

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Usmanov, Z. D. (with Makudov, Kh. T.) Deformations of a discrete surface collection of points. (Russian. Tajiki summary) 85i:53004

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Illert, Chris The mathematics of gnomonic seashells. 85a:92003

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Nonrigidity of certain classes of surfaces of rotation of mixed curvature. (Russian) 85m:53075

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Newman, Thomas G. Geometric methods in dynamic image processing. (See 85i:00011)

Ogus, Koichi (with Takagi, Ryoichi) A submanifold which contains many extrinsic circles. 85i:53023

Pogorelov, A. V. Special infinitesimal bendings of convex surfaces. (Russian) 85m:53076

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Aliev, N. Ya. A case of mappings of surfaces of codimension two of Euclidean spaces. (Russian. English and Azerbaijani summaries) 85c:53006

Aminov, Yu. A. (with Tarasova, T. S.) Determination of a surface in  $E^4$  from a degenerate Grassmann image. (Russian) 85a:53008

Aumann, Günter Verallgemeinerte Regelflächen mit geradlinigen Leitkurven. [Generalized ruled surfaces with straight directrices] 85c:53007

Boas, Harold P. Spheres and cylinders: a local geometric characterization. 85i:53005

Glova, N. I. On the theory of the curvature of a two-dimensional distribution of a four-dimensional Euclidean space. (Russian) 85f:53007

Hagen, H. Totalgeodätische Untermannigfaltigkeiten von verallgemeinerten Regelflächen. [Totally geodesic submanifolds of generalized ruled surfaces] 85i:53006

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Keleş, S. (with Kuruoğlu, N.) On the minimal index of the generalized nonminimal ruled surfaces in the Euclidean  $n$ -space  $E^n$ . (Turkish summary) 85d:53007b

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Kisibkenov, K. O. Expression of the sum of principal radii of curvature of a two-dimensional surface in a four-dimensional Euclidean space in terms of a support function. (Russian) 85k:53007

Kuruoğlu, N. (with Keleş, S.) Properties of generalized ruled surfaces in the Euclidean  $n$ -space  $E^n$  and Massey's theorem. (Turkish summary) 85d:53002a

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Lokotkov, N. N. A special mapping  $T: T_2 \rightarrow N_2$ . (Russian) 85a:53009

Lumiste, Ülo (with Tuulmet, L.) Gaussian curvatures of focal surfaces  $V_2$  of pseudocongruence of straight lines in  $E_n$ . (Russian. English summary) 85j:53009

Medvedeva, I. N. Reconstruction of a noncompact hypersurface, stretched into a given system of contours, from a given mean curvature. (Russian) 85g:53007

Mialok, B. R. Existence and uniqueness of a non-simply-connected convex hypersurface with a given integral extrinsic curvature. (Russian) 85h:53005

Mitrofanova, E. A. A homogeneous space of the representation of the group  $A_n^2(n)$ . (Russian) 85f:53008

Oláh, Róbert On the possibility of embedding a hyperbolic plane in Euclidean space. (Romanian. English summary) 85i:53008

Sharmin, V. G. Topological structure of components of a singular set of a hypersurface of class  $D$  in the space  $E^4$ . (Russian) 85m:53004

Slavov, E. V. Mean curvature of a surface lying on a hypersphere in Euclidean space. (Russian) 85i:53009

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Chen, Bang-yen (with Yamaguchi, Seiichi) Submanifolds with totally geodesic Gauss image. 85d:53023

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Foot, Robert L. Regularity of the distance function. 85m:58024

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Norden, A. P. (with Kharisova, N. Kh.) On the theory of multidimensional congruences. (Russian) 85i:53015

Rapcsák, T. The optimality conditions of the nonlinear programming problems and differential geometry. (Hungarian. English summary) 85f:90100

Romero Fuster, M. C. Sphere stratifications and the Gauss map. 85c:58021

Sdvashkov, O. A. Chebyshev nets on multidimensional surfaces in  $\mathbb{R}^n$ . (Russian) 85f:53021

Sharmin, V. G. Closed nonconvex hypersurfaces with a bijective spherical mapping in  $E^4$ . (Russian) 85g:53071

Thas, C. On submanifolds of a Riemannian manifold  $M$  containing an hypersurface which is totally geodesic in  $M$  and applications. 85d:53012

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Yusin, B. V. A combinatorial formula for the normal Euler class of a lattice 2-manifold in 4-space. 85k:70225

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### 53A10 Minimal surfaces, surfaces with prescribed mean curvature

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## 53B40 Finsler spaces and generalizations (areal metrics)

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- Atanasiu, Gheorghe Variétés différentiables douées de couples de structures Finsler. [Differentiable manifolds equipped with pairs of Finsler structures] **85a:53024**
- Bácsó, S. Eine Charakterisierung der Finslerschen Räume von konstanter Krümmung. [A characterization of Finsler spaces of constant curvature] **85m:53022**
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- Dragomir, Sorin (with Ianuş, S.) On the holomorphic sectional curvature of the Kaehlerian Finsler spaces. **85c:53028**
- Dubey, R. S. D. (a, u, v)-recurrent Finsler spaces. **85c:53046**

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- Prasad, B. N. On subspaces of  $C$ -reducible, semi- $C$ -reducible,  $S_3$ -like and  $S_4$ -like Finsler spaces. **85c:53031**
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- (with Srivastava, A. N.) Some transformations in nonsymmetric Finsler spaces. **85g:53032**
- (with Srivastava, A. N.) Some problems on a conformal Randers-space. **85c:53080**
- (with Srivastava, A. N.) Some problems in decomposed birecurrent Finsler spaces. **85j:53027**

- Shibata, Chōkō (with Singh, U. P.; Singh, Arbind Kumar) On induced and intrinsic theories of hypersurfaces of Kropina spaces. **85c:53033**
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- (with Singh, Gulab) Decomposition of recurrent curvature tensor fields of  $r$ th order in Finsler manifolds. **85d:53013**
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- (with Stoica, Emil) The existence and generality of Finsler connections compatible with generalized metrical Finsler structures of Hermitian type. **85g:53080**
- Hassan, B. T. (with Tamim, A. A.) On a Finsler space with generalized Randers metric. **85b:53076**
- Pande, H. D. (with Tripathi, S. D.) Some theorems on projective Ricci identities in Finsler spaces. **85h:53019**
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## 53B50 Applications to physics

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- Aratyn, H. Rank- $n$  antisymmetric tensor gauge fields in  $2n$ -dimensional space-time and mass generation mechanism. **85g:51103a**
- Auxiliary fields and generalized Schwinger-Higgs mechanism for rank- $n$  antisymmetric tensor gauge fields in  $(n+1)$ -dimensional space-time. **85g:51103b**
- Bampi, Franco (with Caviglia, Giacomo) Third-order tensor potentials for the Riemann and Weyl tensors. **85c:53019a**
- (with Caviglia, Giacomo) Third-order tensor potentials for the Riemann and Weyl tensors. II. Singular solutions. **85c:53019b**
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- Kalgorodov, V. R. Gravitational fields with a recurrent structure of the curvature tensor of arbitrary order. (Russian) **85a:83016**
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- Matošek, T. ★ A concept of mathematical physics: models for space-time. **85m:53086**
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- Nesterenko, V. V.  $SL(3, \mathbb{R})_2$  sigma-model related to the Dodd-Bullough equation. **85h:59082**
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- Novikov, V. N. Melting as the transition to a curved space. **85g:83066**
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- Prince, G. E. Homothetic Killing tensors. **85c:83040**
- See also Crampin, M., **85g:59072**
- Quirós, M. See Hoyos, J.; et al., **85h:58016a**; **85h:58016b** and **85h:58016c**
- Ramírez Mittelbrunn, J. See Hoyos, J.; et al., **85h:58016a**; **85h:58016b** and **85h:58016c**
- Roy, Sisir See Roy Choudhury, Raj Kumar, **85c:81006**
- Roy Choudhury, Raj Kumar (with Roy, Sisir) Stochastic space-time and the concept of potential in classical and quantum mechanics. **85c:81006**
- Salamon, Peter (with Ihrig, Edwin; Berry, R. Stephen) A group of coordinate transformations which preserve the metric of Weinhold. **85b:80002**
- (Sammel, Joseph) See Beju, L.; et al., **85f:53001a** and **85f:53001b**
- Schiffrin, C. G. See Noriega, R. J., **85c:83054**
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- Sharma, Shri Prakash See Gupta, Y. K.; et al., **85d:83023**
- Shimming, R. The Cauchy problem for the Bach field equations in general relativity. (Russian) **85d:83080**
- Simo, J. C. (with Maruden, Jerrold E.) Stress tensors, Riemannian metrics and the alternative descriptions in elasticity. **85g:73002**
- Singh, Tarkeshwar See Singh, Triloki, **85h:83052**
- Singh, Triloki (with Singh, Tarkeshwar) Perfect fluid models of Bianchi type-I in modified Brans-Dicke cosmology. **85h:83052**
- Sofonea, Liviu (with Ionescu-Pallas, Nicholas Jean) "Mathematical geometry" and "physical geometry". **85c:83112**
- Soa, E. See Beju, L.; et al., **85f:53001a** and **85f:53001b**
- Sym, A. Soliton surfaces. II. Geometric unification of solvable nonlinearities. **85f:58058**
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- de Urries, F. J. See Hoyos, J.; et al., **85h:58016a**; **85h:58016b** and **85h:58016c**
- Vlachynsky, E. J. Embedding of the background spacetime of a solution of the Einstein-Straus-Klotz unified field theory. **85m:83088a**
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- Zhang, Hong Tu See Dong, Lian Ke, **85g:83001**
- Zissl, P. A. Topological content of dimensional reduction. **85c:81049**

## 53B99 None of the above, but in this section

## secondary classifications (53B99)

- Amari, Shun-ichi Differential geometry of statistical inference. **85h:62037**
- A foundation of information geometry. **85i:94007**

## 53Cxx Global differential geometry [See also 51H25, 58-XX; for related bundle theory, see 55Rxx, 57Rxx.]

## 53C05 Connections

- Albu, I. D. A note on the  $k$ -flatness of connections. **85c:53052**
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- Balabanova, Raina S. See Borisov, Adriyan V., **85g:53033**
- Bloore, F. J. (with Bratley, I.; Selig, J. M.)  $SU(n)$  bundles over the configuration space of three identical particles moving on  $\mathbb{R}^3$ . **85b:53029**
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## 54-XX GENERAL TOPOLOGY (For the topology of manifolds of all dimensions, see 57Nxx.)

### 54-00 Handbooks, dictionaries, and other reference works

- (Kunen, Kenneth) See Handbook: Set-theoretic topology, 85k:54001  
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- (Berberian, S. K.) See Dixmier, Jacques, 85f:46001  
(Bröcker, Theodor) See Jänich, Klaus, 85a:54001  
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- Johnstone, Peter T. ★ Stone spaces. 85f:54002

### 54-03 Historical (must also be assigned at least one classification number from Section 01)

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- Fixed point theory ★ Seminar on fixed point theory. 85m:54059

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- Berend, Daniel Multi-invariant sets on tori. 85b:11064  
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54H12 Topological lattices, etc. [See also 06B30, 06F30.]

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#### 54J05 Nonstandard topology [See also 03Hxx.]

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- Riečanová, Z. See Neubrunn, T.; et al., 85j:46138

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Aguadé, J. How is algebraic topology algebraic? (Catalan) (Not in MR)

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- (Oliver, B.) See Algebraic topology, 85g:55002
- Aarhus ★ Algebraic topology, Aarhus 1982. 85g:55002
- Algebraic topology ★ Algebraic topology, Aarhus 1982. 85g:55002
- Conference:
- Algebraic topology ★ Algebraic topology, Aarhus 1982. 85g:55002

#### 55-00 Handbooks, dictionaries, and other reference works

#### secondary classifications (55-00)

- Borsuk, Karol ★ Collected papers. Part I, II. 85e:01058
- (Nowak, Sławomir) See Borsuk, Karol, 85e:01058
- (Sieklicki, Karol) See Borsuk, Karol, 85e:01058
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- Borsuk, Karol See Borsuk, Karol, 85e:01058

#### Obituary:

- Borsuk, Karol See Borsuk, Karol, 85e:01058

#### 55-01 Elementary exposition; textbooks

- Munkres, James R. ★ Elements of algebraic topology. 85m:55001
- Osborn, Howard ★ Vector bundles. Vol. 1. 85e:55001
- Pop, I. ★ Elemente de topologie algebrică. (Romanian) [Elements of algebraic topology] 85j:55001

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- (Brücker, Theodor) See Jänich, Klaus, 85a:54001
- Jänich, Klaus ★ Topology. 85a:54001
- Klement, E. P. ★ Elementare Topologie. (German) [Elementary topology] 85e:54001
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- Tóth, Gábor. On the Atiyah-Singer index theorem. IV. Grassmann manifolds and classification of principal bundles. (Hungarian) 85e:58100

#### 55-02 Advanced exposition (research surveys, monographs, etc.)

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- Halperin, S. Lectures on minimal models. 85i:55009

#### 55-03 Historical (must also be assigned at least one classification number from Section 01)

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- Chogoshvili, G. S. Homology of compact spaces. (Russian) (See 85g:01004)
- Homology of arbitrary spaces. (Russian) (See 85g:01004)
- Modern methods in the theory of ordinal homology. (Russian) (See 85g:01004)
- Dieudonné, J. Emmy Noether and algebraic topology. (Not in MR)
- Mishchenko, A. S. New methods in algebraic and differential topology. (Russian) (See 85g:01004)
- Methods of generalized homology theories. (Russian) (See 85g:01004)
- (Noether, Emmy) See Dieudonné, J., (Not in MR)

#### 55-04 Explicit machine computation and programs (not the theory of computation or programming)

- Saludes i Closa, Jordi. A program for computing simplicial homology. (Catalan) 85h:55001
- Svetlichnova, I. K. Calculation of homology groups of systems with a large number of elements. (Russian) 85g:55001

#### 55-06 Proceedings, conferences, etc.

- (Lemaire, Jean-Michel) See Algebraic homotopy and local algebra, 85d:55001
- (Madsen, Ib.) See Algebraic topology, 85g:55002
- (Oliver, B.) See Algebraic topology, 85g:55002
- (Thomas, Jean-Claude) See Algebraic homotopy and local algebra, 85d:55001
- Aarhus ★ Algebraic topology, Aarhus 1982. 85g:55002
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- Algebraic topology ★ Algebraic topology, Aarhus 1982. 85g:55002
- Astérisque ★ Homotopie algébrique et algèbre locale. (French) [Algebraic homotopy and local algebra] 85d:55001
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## 55Mxx Classical topics (For the topology of Euclidean spaces and manifolds, see 57N05, 57N10, 57N15.)

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### 55M15 Absolute neighborhood retracts [See also 54C55, 54F40.]

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Colvin, Michael R. Representing a differentiable function as a Cartesian product. 85i:55001

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Walker, James W. A homology version of the Borsuk-Ulam theorem. 85e:55006

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Dold, A. Fixed point indices of iterated maps. 85c:54077

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Hoffman, Michael On fixed point free maps of the complex flag manifold. 85j:57002

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### 55M35 Finite groups of transformations (including Smith theory)

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Ralls, Nancy Periodic points of symmetric product mappings. 85c:55002

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Davis, Donald M. (with Gitler, Sam; Mahowald, Mark) Correction to: "The stable geometric dimension of vector bundles over real projective spaces" [Trans. Amer. Math. Soc. 268 (1981), no. 1, 39-61; MR 83c:55006]. 85g:55006

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Kassel, Christian Stabilisation de la  $K$ -théorie algébrique des espaces topologiques. [Stabilization of the algebraic  $K$ -theory of topological spaces] 85j:18010

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Schochet, Claude Homogeneous extensions of  $C^*$ -algebras and  $K$ -theory. II. 85e:46035

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Brown, Ronald (with Loday, Jean-Louis) Excision homotopique en basse dimension. (English summary) [Homotopical excision in low dimension] 85d:55018  
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- Dabbour, Abd El-Sattar A. On the projective homology groups. 85m:55004  
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- Chu, Moody T. A simple application of the homotopy method to symmetric eigenvalue problems. 85e:15012  
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- Kalai, Gil Enumeration of  $Q$ -acyclic simplicial complexes. 85a:55006  
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#### 55P20 Eilenberg-Mac Lane spaces

- Prouté, Alain Un contre-exemple à la géométrie du shuffle-coproduct de la cobar-construction. (English summary) [A counterexample to the geometricity of the shuffle coproduct in the cobar-construction] 85b:55012

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- Hilton, Peter (with Roitberg, Joseph) Note on epimorphisms and monomorphisms in homotopy theory. 85j:55014  
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- Anderson, Donald W. There are no phantom cohomology operations in  $K$ -theory. 85a:55015  
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## 55P50 Category and cocategory, etc.

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- Nomura, Yasutoshi Between homotopy monomorphism and having a left homotopy inverse. 85a:55008

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- Demaria, Davide Carlo (with Garbaccio Bogin, Rosanna) Homotopy and homology in pretopological spaces. (See 85d:00027) (Not in MR)  
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## 55P65 Homotopy functors

- Khokhlov, A. V. Covariant homotopy functors. (Russian) 85j:55025

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- Chogoshvili, G. S. The relation of  $D$ -functors to analogous functors. (Russian. English and Georgian summaries) 85g:55011

## 55P91 Equivariant homotopy theory

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## 55Q05 Homotopy groups, general; sets of homotopy classes

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## 55Q07 Shape groups

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## 55Q10 Stable homotopy groups

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## 55Q15 Whitehead products and generalizations

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## 55Q35 Operations in homotopy groups

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- Meri, Masamitsu On higher Toda brackets. 85b:55018

## 55Q40 Homotopy groups of spheres

- Bendersky, Martin The derived functors of the primitives for  $\mathrm{BP}_*(\Omega S^{2n+1})$ . 85f:55008a
- Erratum to: "The derived functors of the primitives for  $\mathrm{BP}_*(\Omega S^{2n+1})$ ". 85f:55008b
- Bödigheimer, Carl-Friedrich (with Henn, Hans-Werner) A remark on the size of  $\pi_q(S^n)$ . 85g:55019
- Henn, Hans-Werner See Bödigheimer, Carl-Friedrich, 85g:55019
- Mukai, Juno The  $S^1$ -transfer map and homotopy groups of suspended complex projective spaces. 85d:55020
- Selick, Paul 2-primary exponents for the homotopy groups of spheres. 85k:55011

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- Antonelli, Peter L. (with Williams, Jeffrey George) Homotopy construction of a spinor wave functional. 85b:81079
- Dancer, E. Norman Perturbation of zeros in the presence of symmetries. 85g:58027
- Selick, Paul A reformulation of the Arf invariant one mod  $p$  problem and applications to atomic spaces. 85d:55017
- Williams, Jeffrey George See Antonelli, Peter L., 85b:81079

## 55Q45 Stable homotopy of spheres

- Aubry, Marc Calculs de groupes d'homotopie stables de la sphère, par la suite spectrale d'Adams-Novikov. [Calculating the stable homotopy groups of spheres by the Adams-Novikov spectral sequence] 85g:55020
- Barratt, M. G. (with Jones, J. D. S.; Mahowald, Mark) The Kervaire invariant problem. 85e:55027
- Iriye, Kouyemon Equivariant stable homotopy groups of spheres with involutions. II. 85a:55011
- Jones, J. D. S. See Barratt, M. G.; et al., 85e:55027
- Mahowald, Mark See Barratt, M. G.; et al., 85e:55027
- Minami, Haruo On  $\mathbb{Z}/2$ - $c$ -invariants. 85j:55028
- Ray, Nigel (with Schwartz, Lionel) Embedding certain complexes via unstable homotopy theory. 85e:55028
- Schwartz, Lionel See Ray, Nigel, 85e:55028
- Singer, William M. Invariant theory and the lambda algebra. 85e:55029

secondary classifications (55Q45)

- Oka, Shichirō Derivations in ring spectra and higher torsions in Coker  $J$ . 85h:55019

55Q50 The  $J$ -morphisms

- Kakutani, Shin-ichiro On equivariant  $J$ -groups of complex projective spaces with the conjugate involution. 85i:55011
- McClure, James E. On the groups  $JO_G X$ . I. 85g:55021
- Minami, Haruo Correction to: "On  $J_g$ -homomorphisms" [Osaka J. Math. 16 (1979), no. 3, 581-588; MR 81e:55021]. 85h:55020
- Wu, Zhen De The  $J$ -groups of  $\mathrm{CP}(2n) \wedge L_p$  ( $p$  prime). (Chinese) 85b:55019

secondary classifications (55Q50)

- Hauschild, Henning (with Waner, Stefan) The equivariant Dold theorem mod  $k$  and the Adams conjecture. 85b:55021
- Waner, Stefan See Hauschild, Henning, 85b:55021

## 55Q52 Homotopy groups of special spaces

- Lundell, Albert T. The  $p$ -equivalence of  $\mathrm{SO}(2n+1)$  and  $\mathrm{Sp}(n)$ . 85e:55030
- Zabrodsky, A. On the realization of invariant subgroups of  $\pi_*(X)$ . 85k:55013

secondary classifications (55Q52)

- Nanda, Srihata Homotopy groups of principal spaces. 85i:54033
- Nikolenko, P. V. Homotopy groups of some spaces of matrix-functions and the stability of a system of partial indices of a family of matrix-functions. (Russian) 85f:59005
- Pastor, Guillermo On bordism groups of immersions. 85j:57055
- Wiegmann, Reinhard Immersions of highly connected manifolds. 85b:57036

## 55Q55 Cohomotopy groups

- Miller, Haynes (with Wilkerson, Clarence) On the Segal conjecture for periodic groups. 85f:55020
- Shen, Xin Yao Note on block invariants. 85j:55029
- Wilkerson, Clarence See Miller, Haynes, 85b:55020

secondary classifications (55Q55)

- Jones, J. D. S. (with Wegmann, S. A.) Limits of stable homotopy and cohomotopy groups. 85b:55014
- Maunder, C. R. F. On Segal's Burnside ring conjecture for the group  $\mathbb{Z}_2$ . 85c:55016
- Wegmann, S. A. See Jones, J. D. S., 85b:55014

## 55Q91 Equivariant homotopy groups

- Hauschild, Henning (with Waner, Stefan) The equivariant Dold theorem mod  $k$  and the Adams conjecture. 85b:55021
- Waner, Stefan See Hauschild, Henning, 85b:55021

secondary classifications (55Q91)

- Maunder, C. R. F. On Segal's Burnside ring conjecture for the group  $\mathbb{Z}_2$ . 85c:55016
- Okonek, Christian Die äquivariante unitäre Kobordismentheorie und ihre äquivariante formale Gruppe. [The equivariant unitary cobordism theory and its equivariant formal group] 85h:55010

## 55Q99 None of the above, but in this section

- Amici, O. (with Casciaro, B.) A combinatorial definition of homotopy groups of polyhedra. (Italian. English summary) 85j:55030
- Casciaro, B. See Amici, O., 85j:55030
- Hansen, Vagn Lundgaard On the homotopy groups of punctured manifolds. 85e:55031
- Hernández Paricio, Luis Javier Dual homotopy groups of abelian groups. (Spanish. English summary) 85a:55012

secondary classifications (55Q99)

- Cavicchioli, Alberto (with Grasselli, Luigi) Cohomological products and transversality. 85f:55003
- Domínguez Murillo, Eladio (with Hernández, L. J.) Notes on proper homotopy theories associated with compact PL-manifolds. 85j:57035
- Grasselli, Luigi See Cavicchioli, Alberto, 85f:55003
- Henry, Michel Classe d'homotopie d'une sphère plongée dans  $\#_q S^2 \times S^1$ . (English summary) [Homotopy class of a sphere embedded in  $\#_q S^2 \times S^1$ ] 85a:57004
- Hernández, L. J. See Domínguez Murillo, Eladio, 85j:57035
- Kléman, M. ★ Points, lines and walls. In liquid crystals, magnetic systems and various ordered media. 85e:82058

# 55Rxx Fiber spaces and bundles [See also 18F15, 32Lxx, 46M20, 57R20, 57R22, 57R25.]

## 55R05 Fiber spaces

- Albu, A. C. (with Oprea, D.) Continuous connections on topological fibrations. 85a:55013
- Chen, Wen Yuan Local homeomorphisms and covering maps. (Chinese) 85c:55014
- Croom, F. H. Fiber maps on  $H$ -fibrations. 85f:55009
- Gorbatshev, V. V. A criterion for the existence of a natural fibering for a compact homogeneous manifold. (Russian) 85c:55015
- Gottlieb, Daniel H. Transfers, centers, and group cohomology. 85f:55010
- McClendon, J. F. Open subsets of fibrations. 85f:55011
- Morgan, Christopher Charles Gradige Characterizations of  $\mathcal{F}$ -fibrations. 85g:55022
- Noakes, J. L. Fibrations and homotopy type. 85g:55023
- Oprea, D. See Albu, A. C. 85a:55013
- Zhou, Xue Guang Fibre spaces and fibre bundles. (Chinese) (Not in MR)

### secondary classifications (55R05)

- Llerena, Irene Localization of nilpotent fibre maps. 85h:55016

## 55R10 Fiber bundles

- Booth, Peter (with Heath, Philip R.; Morgan, Christopher Charles Gradige; Piccinini, Renzo)  $H$ -spaces of self-equivalences of fibrations and bundles. 85k:55013
- Heath, Philip R. See Booth, Peter; et al. 85k:55013
- Hess, Harald (with Krausser, D.) Lifting classes of principal bundles. 85g:55024
- Ivan, Gh. Le relèvement des applications continues et les raffinements d'un espace fibré principal de Steenrod. [The lifting of continuous mappings and the refinements of Steenrod principal fiber spaces] 85e:55032
- Sur les tissus de Jordan-Hölder associés aux fibrés principaux différentiables. [Jordan-Hölder webs associated with differentiable principal bundles] 85d:55021
- Kiranagi, Basavanappa S. See Prema, G. 85d:55022
- Krausser, D. See Hess, Harald. 85g:55024
- Lewis, L. G., Jr. The uniqueness of bundle transfers. 85b:55022
- Morgan, Christopher Charles Gradige See Booth, Peter; et al. 85k:55013
- Piccinini, Renzo See Booth, Peter; et al. 85k:55013
- Prema, G. (with Kiranagi, Basavanappa S.) On complete reducibility of module bundles. 85d:55022

### secondary classifications (55R10)

- Awada, Moustafa A. Fibre bundles and supergravity. 85d:83076
- Bruni, Marcello Some remarks on the Hopf bundle  $M = (S^{4n-1}, \mathbb{H}^{n-1}, S^3, p)$ . (Italian) 85b:53072
- Karoubi, M. (with Mudrinski, Vojislav)  $K$ -théorie réelle de fibrés projectifs complexes. (English summary) [Real  $K$ -theory of complex projective bundles] 85e:55012
- Kolář, I. Prolongations of generalized connections. 85c:53057
- Luehr, C. P. (with Rosenbaum, Marcos) Unified gauge theory for electromagnetism and gravitation based on twistor bundles. 85d:81141
- Mudrinski, Vojislav See Karoubi, M. 85e:55012
- Noakes, J. L. Fibrations and homotopy type. 85g:55023
- Percacci, R. (with Randjbar-Daemi, S.) Kaluza-Klein theories on bundles with homogeneous fibers. I. 85d:83074
- Pisanski, T. (with Shawe-Taylor, John; Vrabec, Jozsef) Edge-colorability of graph bundles. 85b:05086
- Randjbar-Daemi, S. See Percacci, R. 85d:83074
- Rosenbaum, Marcos See Luehr, C. P. 85d:81141
- Shawe-Taylor, John See Pisanski, T.; et al. 85b:05086
- Tsapek, V. P. Connectivity in a fibering associated with a hypercomplex of pairs of figures  $(P, Q)$ . (Russian) 85c:53013
- Vrabec, Jozsef See Pisanski, T.; et al. 85b:05086
- Zhou, Xue Guang Fibre spaces and fibre bundles. (Chinese) (Not in MR)

## 55R12 Transfer

- Davis, Donald M. The splitting of  $BO(8) \wedge bo$  and  $MO(8) \wedge bo$ . 85e:55033

### secondary classifications (55R12)

- Smith, Larry Transfer and ramified coverings. 85f:57003

## 55R15 Classification

- Fukuhara, Shinji See Sakamoto, Koichi. 85b:55021
- Lashof, Richard (with May, J. P.; Segal, G. B.) Equivariant bundles with abelian structural group. 85b:55023
- May, J. P. See Lashof, Richard; et al. 85b:55023
- Sakamoto, Koichi (with Fukuhara, Shinji) Classification of  $T^2$ -bundles over  $T^2$ . 85b:55021
- Segal, G. B. See Lashof, Richard; et al. 85b:55023

### secondary classifications (55R15)

- Bloore, F. J. (with Bratley, I.; Selig, J. M.)  $SU(n)$  bundles over the configuration space of three identical particles moving on  $\mathbb{R}^3$ . 85b:53029
- Bracho, Javier Haefliger structures and linear homotopy. 85d:57026
- Bratley, I. See Bloore, F. J.; et al. 85b:53029
- Peternell, Ulrike ★ Banach-analytische Faserbündel auf nicht-kompakten Riemannschen Flächen. (German) [Banach-analytic fiber bundles on noncompact Riemann surfaces] 85k:32054
- Selig, J. M. See Bloore, F. J.; et al. 85b:53029

## 55R20 Spectral sequences and homology of fiber spaces [See also 55Txx.]

- Prouté, Alain Vers un  $\mathbb{Z}/p$ -lemme de Hirsch. (English summary) [Towards a  $\mathbb{Z}/p$  Hirsch lemma] (See 85d:55001)
- Shibata, Katsuyuki Sullivan-Quillen mixed type model for fibrations. 85m:55018

### secondary classifications (55R20)

- Hilton, Peter On special group-automorphisms and their composition. 85k:20090
- Singh Varma, H. O. The integral cohomology of certain homogeneous spaces. 85f:57029
- Tóth, Gábor On the Atiyah-Singer index theorem. IV. Grassmann manifolds and classification of principal bundles. (Hungarian) 85c:58100

## 55R25 Sphere bundles and vector space bundles

- Ishimoto, Hiroyasu Homotopy classification of connected sums of sphere bundles over spheres. III. 85d:55023
- Kakutani, Shin-ichiro The equivariant span of the unit spheres in representation spaces. 85e:55034
- Kiranagi, Basavanappa S. Semisimple Lie algebra bundles. 85b:55024
- Maki, Haruo On the extendibility of vector bundles over the lens spaces and the projective spaces. 85a:55014
- Naldanova, M. Uniform Fredholm complexes. (Bulgarian. English and Russian summaries) 85h:55022
- Tanaka, Ryoichi On the stable James numbers of Thom complexes. 85e:55035

### secondary classifications (55R25)

- Al-Sabti, George Framings on  $SO_4$ . 85c:57026
- Davis, Donald M. (with Gitler, Sam; Mahowald, Mark) Correction to: "The stable geometric dimension of vector bundles over real projective spaces" [Trans. Amer. Math. Soc. 268 (1981), no. 1, 39-61; MR 83c:55006]. 85g:55006
- Desuspensions of stunted projective spaces. 85k:55008
- Filanovskii, I. A. Coherent states for  $Sp(2, 2)$  and a geometrized model of unstable system decay. (Russian. English summary) 85c:81019
- Gitler, Sam See Davis, Donald M.; et al. 85g:55006
- Gluck, Herman (with Warner, Frank; Yang, Chung Tao) Division algebras, fibrations of spheres by great spheres and the topological determination of space by the gross behavior of its geodesics. 85i:53047
- Khokhlov, A. V.  $k(n)$ -theories of bordisms with singularities and  $k(n)$ -orientability of fiberings. (Russian) 85k:55006
- Mahowald, Mark See Davis, Donald M.; et al. 85g:55006
- Melvin, Paul 2-sphere bundles over compact surfaces. 85j:57039
- Önder, Turgut Almost-quaternion substructures on the canonical  $C^{n-1}$ -bundle over  $S^{2n-1}$ . 85a:55017
- Osborn, Howard ★ Vector bundles. Vol. 1. 85e:55001
- Quirós, M. (with Rodríguez, Emilia Carmen) On the relationship between abelian and  $SU_2$   $n$ -monopoles. (Italian and Russian summaries) 85b:81210
- Ringwood, G. A. The monopole's spinor fields. 85d:81117
- Rodríguez, Emilia Carmen See Quirós, M. 85b:81210
- Warner, Frank See Gluck, Herman; et al. 85i:53047
- Yang, Chung Tao See Gluck, Herman; et al. 85i:53047

## 55R35 Classifying spaces of groups and $H$ -spaces

- Harada, Masana (with Kono, Akira) Cohomology mod  $p$  of the 4-connective fibre space of the classifying space of classical Lie groups. 85j:55031
- Kono, Akira See Harada, Masana. 85j:55031
- Mahmud, Z. The symplectic morphisms  $BG \rightarrow BSp(n)$ . (Arabic summary) 85d:55024
- Maunder, C. R. F. On Segal's Burnside ring conjecture for the group  $\mathbb{Z}_2$ . 85e:55016
- Miller, Haynes The Sullivan conjecture on maps from classifying spaces. 85i:55012
- Rees, Elmer Towers of submanifolds of Grassmannians. 85f:55012

### secondary classifications (55R35)

- Madsen, Ib. (with Milgram, R. James) ★ Классифицирующие пространства для перестроек и кобордизмов многообразия. (Russian) [The classifying spaces for surgery and cobordism of manifolds] 85j:57022
- Milgram, R. James See Madsen, Ib. 85j:57022
- Mitchell, Stephen A. (with Priddy, Stewart B.) Stable splittings derived from the Steinberg module. 85f:55005
- (Postnikov, M. M.) See Madsen, Ib. 85j:57022
- Priddy, Stewart B. See Mitchell, Stephen A. 85f:55005
- (Rudyak, Yu. B.) See Madsen, Ib. 85j:57022
- Smith, Larry (with Switzer, R. M.) Realizability and nonrealizability of Dickson algebras as cohomology rings. 85e:55036
- (with Switzer, R. M.) Polynomial algebras over the Steenrod algebra: variations on a theorem of Adams and Wilkerson. 85m:55021
- Switzer, R. M. See Smith, Larry. 85e:55036 and 85m:55021

## 55R40 Homology of classifying spaces, characteristic classes [See also 57Txx, 57R20.]

- Berezin, F. A. (with Retakh, V. S.) A method of computing characteristic classes of vector bundles. 85b:55023
- Feshbach, Mark The integral cohomology rings of the classifying spaces of  $O(n)$  and  $SO(n)$ . 85b:55025
- Hegenbarth, Friedrich (with Heil, Artur) Exotic characteristic classes and their relation to universal surgery classes. 85g:55025
- Heil, Artur See Hegenbarth, Friedrich. 85g:55025
- Jekel, Solomon M. Simplicial decomposition of  $\Gamma$ -structures. 85b:55024
- Morita, Shigeyuki Characteristic classes of surface bundles. 85j:55032
- Nishida, Goro On the  $S^1$ -Segal conjecture. 85g:55026

Rector, D. L. Noetherian cohomology rings and finite loop spaces with torsion. 85j:55033

Retakh, V. S. See Beresin, F. A., 85h:55023

Smith, Larry Polynomial and related algebras as cohomology rings (report on recent progress). 85m:55019

(with Switzer, R. M.) Realizability and nonrealizability of Dickson algebras as cohomology rings. 85e:55036

Switzer, R. M. See Smith, Larry, 85e:55036

Thomas, C. B. Filtrations on the representation ring of a finite group. 85d:55025

Wilson, W. Stephen The complex cobordism of  $BO_n$ . 85k:55014

secondary classifications (55R40)

Ariettes, Dominique Chern-Klassen von ganzzahligen und rationalen Darstellungen diskreter Gruppen. [Chern classes of integer and rational representations of discrete groups] 85m:57018

Ishitoya, Kiminao (with Tauge, Masayoshi) The Chern class of the symmetric space EIII. 85e:57055

Kozłowski, Andrzej The Evens-Kahn formula for the total Stiefel-Whitney class. 85h:55007

Lascoux, Alain Classes de Chern des variétés de drapeaux. (English summary) [Chern classes of flag manifolds] 85e:14074

Milnor, J. On the homology of Lie groups made discrete. 85b:57050

Newstead, P. E. On the relations between characteristic classes of stable bundles of rank 2 over an algebraic curve. 85k:14005

Tauge, Masayoshi See Ishitoya, Kiminao, 85e:57055

## 55R45 Homology and homotopy of $BO$ and $BU$ ; Bott periodicity

Kochman, Stanley O. An algebraic filtration of  $H_*BO$ . 85g:55027

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Davis, Donald M. The splitting of  $BO(8) \wedge bo$  and  $MO(8) \wedge bo$ . 85e:55033

Lance, Timothy Steenrod and Dyer-Lashof operations on  $BU$ . 85d:55027

Ray, Nigel (with Schwartz, Lionel) Construction d'éléments dans  $\pi_*^*(BU(2))$ . (English summary) [Construction of elements in  $\pi_*^*(BU(2))$ ] 85m:55011

Schwartz, Lionel See Ray, Nigel, 85m:55011

## 55R50 Stable classes of vector space bundles, $K$ -theory {For algebraic $K$ -theory, see 18F25.}

secondary classifications (55R50)

Costinescu, Cristian Nicolae  $K$ -theory of some symmetric spaces. (Romanian. English summary) 85c:57049

Mahmud, Z. The symplectic morphisms  $BG \rightarrow BSp(n)$ . (Arabic summary) 85d:55024

Maki, Haruo On the extendibility of vector bundles over the lens spaces and the projective spaces. 85a:55014

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## 55R65 Generalizations of fiber spaces and bundles

Bykov, A. I. Fibrant extensions of shape fibrations. (Russian) 85m:55020

Chapman, T. A. (with Ferry, Steve) Constructing approximate fibrations. 85b:55026

Ferry, Steve See Chapman, T. A., 85b:55026

Goad, R. E. Local homotopy products. 85b:55027

Grivel, Pierre-Paul Fibrés algébriques de fibre donnée. (English summary) [Algebraic fiber bundles with given fibre] (See 85d:55001)

Haxhibegiri, Q. Shape fibrations for topological spaces. (Serbo-Croatian summary) 85h:55025

Shape fibrations for compact Hausdorff spaces. 85k:55016a

The exact sequence of a shape fibration. (Serbo-Croatian summary) 85k:55016b

Jani, Mahendra Cell-like shape fibrations which are fiber shape equivalences. 85d:55026

Siegel, Jerrold (with Williams, Frank) Numerical invariants of homotopies into spheres. 85i:55013

Williams, Frank See Siegel, Jerrold, 85i:55013

secondary classifications (55R65)

Chapman, T. A. A general approximation theorem for Hilbert cube manifolds. 85e:57016

Clapp, Mónica (with Puppe, D.) The homotopy category of parametrized spectra. 85e:55007

Morgan, Christopher Charles Gradage Characterizations of  $\mathcal{F}$ -fibrations. 85g:55022

Petrie, Ted Smith equivalence of representations. 85i:57011

Puppe, D. See Clapp, Mónica, 85e:55007

Siegel, Jerrold (with Williams, Frank) Variational invariants of Riemannian manifolds. 85i:55014

Williams, Frank See Siegel, Jerrold, 85i:55014

## 55R91 Equivariant fiber spaces and bundles

Lashof, Richard Equivariant bundles over a single orbit type. 85b:55028

## 55R99 None of the above, but in this section

Miller, Haynes Universal Bernoulli numbers and the  $S^1$ -transfer. 85b:55029

Yasuo, Minato On the spaces  $O(4n)/Sp$  and  $Sp(n)/O$ , and the Bott maps. 85j:55034

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Rochberg, Richard Interpolation of Banach spaces and negatively curved vector bundles. 85m:46077

Sasin, Wiesław (with Żekanowski, Zbigniew) Some sheaves over a differential space. 85m:58017

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## 55Sxx Operations and obstructions

### 55S05 Primary cohomology operations

secondary classifications (55S05)

Cenkl, Bohumil (with Porter, Richard) Cup- $i$  product and higher homotopies in the de Rham complex. 85j:55039

Natale, Elvira Steenrod cubes and orthogonal representability. (Italian) 85h:57043

Porter, Richard See Cenkl, Bohumil, 85j:55039

### 55S10 Steenrod algebra

Campbell, H. E. A. An intrinsic construction of Steenrod squares for mod 2 de Rham forms. 85j:55035

Kochman, Stanley O. An algebraic filtration of  $H_*(MO; \mathbb{Z}_2)$ . 85e:55013

Lance, Timothy Steenrod and Dyer-Lashof operations on  $BU$ . 85d:55027

Li, Hu Haiung The construction of a certain homology of the Steenrod algebra. 85h:55026

Lin, Jin Kun Necessary and sufficient conditions for simplicity of a module over the Steenrod algebra. (Chinese) (Not in MR)

Lin, Wen Haiung Cohomology of the Steenrod algebra. 85b:55030

Smith, Larry (with Switzer, R. M.) Polynomial algebras over the Steenrod algebra: variations on a theorem of Adams and Wilkerson. 85m:55021

Switzer, R. M. See Smith, Larry, 85m:55021

Wilkerson, Clarence A primer on the Dickson invariants. 85e:55017

secondary classifications (55S10)

Davis, Donald M. (with Mahowald, Mark) Ext over the subalgebra  $A_2$  of the Steenrod algebra for stunted projective spaces. 85a:55018

Mahowald, Mark See Davis, Donald M., 85a:55018

Pashitnov, A. V. Uniqueness theorems for generalized cohomology theories. (Russian) 85e:55008

Rector, D. L. Noetherian cohomology rings and finite loop spaces with torsion. 85j:55033

Shimamoto, Don H. An integral version of the Brown-Gitler spectrum. 85m:55012

Singer, William M. Invariant theory and the lambda algebra. 85e:55029

### 55S12 Dyer-Lashof operations

Bahri, Anthony P. Operations in the second quadrant Eilenberg-Moore spectral sequence. 85b:55031

Kraines, David (with Lada, Thomas) The cohomology of the Dyer-Lashof algebra. 85b:55032

Lada, Thomas See Kraines, David, 85b:55032

Steiner, Richard Homology operations and power series. 85e:55037

Watanabe, Takashi An application of the iterated loop space theory to cohomology suspensions. 85d:55028

secondary classifications (55S12)

Cohen, Frederick R. (with May, J. P.; Taylor, Laurence R.) James maps and  $E_n$  ring spaces. 85m:55010

Kuhn, Nicholas J. The homology of the James-Hopf maps. 85g:55013

Lance, Timothy Steenrod and Dyer-Lashof operations on  $BU$ . 85d:55027

May, J. P. See Cohen, Frederick R.; et al., 85m:55010

Taylor, Laurence R. See Cohen, Frederick R.; et al., 85m:55010

### 55S15 Symmetric products, cyclic products

Lin, Wen Haiung Cohomology extensions in certain 2-stage Postnikov systems. 85d:55029

### 55S20 Secondary and higher cohomology operations

Zabrodsky, A. Cohomology operations and  $H$ -spaces. 85k:55017

secondary classifications (55S20)

Lin, James P. Higher order operations in the mod 2 cohomology of finite  $H$ -spaces. 85b:55015



55S25 *K*-theory operations and generalized cohomology operations

- Anderson, Donald W. There are no phantom cohomology operations in *K*-theory. 85a:55015  
 Naylor, Charles M. Cohomology operations in the *K*-theory of the classical groups. 85j:55036

secondary classifications (55S25)

- Audin, Michèle Opérations géométriques en cobordisme complexe. (English summary) [Geometric operations in complex cobordism] 85j:57056  
 Fulton, William (with Gillet, Henri) Riemann-Roch for general algebraic varieties. (French summary) 85b:14010  
 Gillet, Henri See Fulton, William, 85b:14010  
 Johnson, Keith Peter The action of the stable operations of complex *K*-theory on coefficient groups. 85i:55003  
 Kane, Richard The cohomology of finite *H*-spaces as *U*(*M*) algebras. III. 85f:55006  
 Kobayashi, Teichi Stable homotopy types of stunted lens spaces mod *p*. 85h:55012  
 Yagita, Nobuaki On relations between Brown-Peterson cohomology and the ordinary mod *p* cohomology theory. 85g:55007  
 Yoshimura, Zen-ichi BP operations and homological properties of BP, BP-comodules. 85c:55005

## 55S30 Massey products

secondary classifications (55S30)

- Brown, Ronald (with Loday, Jean-Louis) Excision homotopique en basse dimension. (English summary) [Homotopical excision in low dimension] 85d:55018  
 Loday, Jean-Louis See Brown, Ronald, 85d:55018

## 55S35 Obstruction theory

- Miller, Haynes The Sullivan conjecture. 85a:55016

## 55S37 Classification of mappings

- Brewster, Stephen (with Homer, William) Rational automorphisms of Grassmann manifolds. 85b:55033  
 Homer, William See Brewster, Stephen, 85b:55033

secondary classifications (55S37)

- Hoffman, Michael (with Homer, William) On cohomology automorphisms of complex flag manifolds. 85m:57028  
 Endomorphisms of the cohomology of complex Grassmannians. 85f:57028  
 Homer, William See Hoffman, Michael, 85m:57028

## 55S40 Sectioning fiber spaces and bundles

- Önder, Turgut On the obstructions to cross sectioning symplectic Stiefel manifolds. (Turkish summary) 85b:55034  
 Almost-quaternion substructures on the canonical  $C^{n-1}$ -bundle over  $S^{2n-1}$ . 85a:55017  
 Almost-quaternion ( $m-1$ )-substructures on  $S^{4m-3}$ . 85d:57023

secondary classifications (55S40)

- Ōshima, Hideaki A remark on almost-quaternion substructures on the sphere. 85h:57028

55S45 Postnikov systems, *k*-invariants

secondary classifications (55S45)

- Lin, Wên Hsiung Cohomology extensions in certain 2-stage Postnikov systems. 85d:55029  
 Savitkaya, T. N. Postnikov decompositions of a fibration with  $K(\pi, n)$  fiber. (Russian) (Not in MR)  
 Shimamoto, Don H. An integral version of the Brown-Gitler spectrum. 85m:55012  
 Zabrodsky, A. On the realization of invariant subgroups of  $\pi_*(X)$ . 85k:55012

## 55S99 None of the above, but in this section

secondary classifications (55S99)

- Gay, C. D. (with Morris, G. C.; Morris, I.) Computing Adams operations on the Burnside ring of a finite group. 85i:20010  
 Morris, G. C. See Gay, C. D.; et al., 85i:20010  
 Morris, I. See Gay, C. D.; et al., 85i:20010

## 55Txx Spectral sequences [See also 18G40, 55R20.]

## 55T10 Serre spectral sequences

- Legrand, A.  $\pi_1$  et  $d_2$ . (English summary) [ $\pi_1$  and  $d_2$ ] (See 85d:55001)

secondary classifications (55T10)

- Miller, Haynes The Sullivan conjecture. 85a:55016

## 55T15 Adams spectral sequences

- Davis, Donald M. (with Mahowald, Mark) Ext over the subalgebra  $A_2$  of the Steenrod algebra for stunted projective spaces. 85a:55018  
 Mahowald, Mark See Davis, Donald M., 85a:55018

secondary classifications (55T15)

- Aubry, Marc Calculs de groupes d'homotopie stables de la sphère, par la suite spectrale d'Adams-Novikov. [Calculating the stable homotopy groups of spheres by the Adams-Novikov spectral sequence] 85g:55020  
 Barratt, M. G. (with Jones, J. D. S.; Mahowald, Mark) The Kervaire invariant problem. 85e:55027  
 Cohen, Ralph L. (with Goerss, Paul) Secondary cohomology operations that detect homotopy classes. 85m:55017  
 Goerss, Paul See Cohen, Ralph L., 85m:55017  
 Jones, J. D. S. See Barratt, M. G.; et al., 85e:55027  
 Lannes, Jean (with Zarati, Saïd) Invariants de Hopf d'ordre supérieur et suite spectrale d'Adams. (English summary) [Higher Hopf invariants and Adams' spectral sequence] 85a:55009  
 Mahowald, Mark See Barratt, M. G.; et al., 85e:55027  
 Miller, Haynes (with Wilkerson, Clarence) On the Segal conjecture for periodic groups. 85b:55020  
 The Sullivan conjecture on maps from classifying spaces. 85i:55012  
 Singer, William M. Invariant theory and the lambda algebra. 85e:55029  
 Wilkerson, Clarence See Miller, Haynes, 85b:55020  
 Zarati, Saïd See Lannes, Jean, 85a:55009

## 55T20 Eilenberg-Moore spectral sequences [See also 57T35.]

secondary classifications (55T20)

- Bahri, Anthony P. Operations in the second quadrant Eilenberg-Moore spectral sequence. 85b:55031  
 Félix, Yves (with Halperin, S.; Thomas, Jean-Claude) L.S. catégorie et suite spectrale de Milnor-Moore (une nuit dans le train). (English summary) [L.S. category and Milnor-Moore spectral sequence (a night on the train)] 85d:55011  
 Halperin, S. See Félix, Yves; et al., 85d:55011  
 Tanré, Daniel Fibrations et classifiants. (English summary) [Fibrations and classifying spaces] 85h:55018  
 Thomas, Jean-Claude See Félix, Yves; et al., 85d:55011

## 55T25 Generalized cohomology

secondary classifications (55T25)

- Anderson, Donald W. There are no phantom cohomology operations in *K*-theory. 85a:55015  
 Ucel, Jack On  $BP(1)^*(K(Z, 3); \mathbb{Z}/p)$ . 85c:55004

## 55T99 None of the above, but in this section

- Didierjean, A. (with Legrand, A.) Suites spectrales de Serre en homotopie. [Serre spectral sequences in homotopy] 85j:55037  
 Legrand, A. See Didierjean, A., 85j:55037  
 Pitts, Gh. Suites spectrales en cohomologie de Čech abstraite. (English summary) [Spectral sequences in abstract Čech cohomology] 85j:55038

secondary classifications (55T99)

- Caserta, Francesco Resolving singularities in bordism. (Italian. English summary) 85h:57042  
 Costinescu, Cristian Nicolae La suite spectrale Atiyah-Hirzebruch et le calcul des  $KG$ -groupes. [The Atiyah-Hirzebruch spectral sequence and the calculation of  $KG$ -groups] 85d:55005  
 Dushin, S. V.  $\mathbb{C}$ -spectral sequence on the manifold  $J^1M$ . (Russian) 85f:58126

## 55Uxx Applied homological algebra and category theory

[See also 18Gxx.]

## 55U05 Abstract complexes

- Giuli, Erlando Two families of Cartesian closed topological categories. 85m:55027b  
 Preuss, Gerhard Some categorical aspects of simplicial complexes. 85m:55022a

## 55U10 Semisimplicial complexes

- Ashley, N. *T*-complexes and crossed complexes. (See 85g:55028)  
 Brown, Ronald An introduction to simplicial *T*-complexes. (See 85g:55028)  
 Dakin, M. K. Kan complexes and multiple groupoid structures. (See 85g:55028)  
 Dwyer, William G. (with Kan, D. M.) Function complexes for diagrams of simplicial sets. 85e:55038  
 Kan, D. M. See Dwyer, William G., 85e:55038  
 Luna Torres, Joaquín See Ruiz Salguero, Carlos, 85h:55027  
 Ruiz Salguero, Carlos (with Luna Torres, Joaquín) Normality in generalized realizations ( $R_Y(X)$ ). (Spanish. English summary) 85h:55027  
 Esquisses mathématiques ★ Esquisses mathématiques. 32. [Mathematical sketches. 32] 85g:55028  
 Mathematical sketches ★ Esquisses mathématiques. 32. [Mathematical sketches. 32] 85g:55028

secondary classifications (55U10)

- Campbell, H. E. A. An intrinsic construction of Steenrod squares for mod 2 de Rham forms. 85j:55035

- Carlsson, Gunnar A simplicial group construction for balanced products. 85e:55019 (Joyal, A.) See Wraith, G., 85h:18004  
 Singer, William M. Invariant theory and the lambda algebra. 85e:55029  
 Wraith, G. Toposes and simplicial sets: the cohomological connection. 85h:18004

## 55U15 Chain complexes

- Müller, Thomas Note on homotopy pullbacks in abelian categories. 85f:55014

## secondary classifications (55U15)

- Cenkli, Bohumil (with Porter, Richard) de Rham theorem with cubical forms. 85j:55009  
 Porter, Richard See Cenkli, Bohumil, 85j:55009  
 Schafer, James A. Finite complexes and integral representations. II. 85m:55008

## 55U20 Universal coefficient theorems, Bockstein operator

- Luis Puebla, Emilio (with Snaithe, Victor) On the integral homology of the symmetric group. 85h:55028  
 Snaithe, Victor See Luis Puebla, Emilio, 85h:55028

## 55U35 Abstract homotopy theory

## secondary classifications (55U35)

- Fantham, P. H. H. (with Moore, E. J.) Groupoid enriched categories and homotopy theory. 85e:18003  
 Hernández Paricio, Luis Javier An example of homotopy theory in abelian groups. (Spanish. English summary) 85b:20079  
 Moore, E. J. See Fantham, P. H. H., 85e:18003  
 Prouté, Alain Un contre-exemple à la géométrie du shuffle-coproduct de la cobar-construction. (English summary) [A counterexample to the geometricity of the shuffle coproduct in the cobar-construction] 85b:55012

## 55U40 Topological categories

- Fiedorowicz, Z. Classifying spaces of topological monoids and categories. 85d:55030

## secondary classifications (55U40)

- Bracho, Javier Haefliger structures and linear homotopy. 85d:57026  
 Giul, Eraldo Two families of Cartesian closed topological categories. 85m:55022b  
 Preuss, Gerhard Some categorical aspects of simplicial complexes. 85m:55022a

## 55U99 None of the above, but in this section

- Cenkli, Bohumil (with Porter, Richard) Cup-i product and higher homotopies in the de Rham complex. 85j:55039  
 Porter, Richard See Cenkli, Bohumil, 85j:55039

## secondary classifications (55U99)

- Carlsson, Gunnar On the homology of finite free  $(\mathbb{Z}/2)^n$ -complexes. 85h:57045  
 Dogaru, Otilia Some combinatorial properties of connected topological spaces. (Romanian. French summary) 85d:54017  
 Hernández Paricio, Luis Javier Dual homotopy groups of abelian groups. (Spanish. English summary) 85a:55012  
 Legrand, A.  $\pi_1$  et  $d_2$ . (English summary) [ $\pi_1$  and  $d_2$ ] (See 85d:55001)  
 Leonelli, Antonio Homotopies induced by actions. (Italian. English summary) 85c:18008

## 57-XX MANIFOLDS AND CELL COMPLEXES (For complex manifolds, see 32C10.)

## secondary classifications (57-XX)

- (Madsen, Ib.) See Algebraic topology, 85g:55002  
 (Oliver, B.) See Algebraic topology, 85g:55002  
 Aarhus ★ Algebraic topology, Aarhus 1982. 85g:55002  
 Algebraic topology ★ Algebraic topology, Aarhus 1982. 85g:55002  
 Conference:  
 Algebraic topology ★ Algebraic topology, Aarhus 1982. 85g:55002

## 57-01 Elementary exposition; textbooks

- (Boron, Les F.) See Gramain, André, 85m:57001  
 (Christenson, Charles O.) See Gramain, André, 85m:57001  
 Gramain, André ★ Topology of surfaces. 85m:57001  
 Moran, Siegfried ★ The mathematical theory of knots and braids. 85i:57001  
 (Smith, Bryan A.) See Gramain, André, 85m:57001

## secondary classifications (57-01)

- (Brücker, Theodor) See Jänich, Klaus, 85a:54001  
 Jänich, Klaus ★ Topology. 85a:54001  
 Lehmann, Daniel ★ Géométrie et topologie des surfaces. (French) [Geometry and topology of surfaces] 85i:53001  
 (Levy, Silvio) See Jänich, Klaus, 85a:54001  
 Mishchenko, A. S. Topology of low-dimensional manifolds. (Russian) (See 85g:01004)  
 Osborn, Howard ★ Vector bundles. Vol. 1. 85e:55001  
 (Sacré, Carlos) See Lehmann, Daniel, 85i:53001

## 57-02 Advanced exposition (research surveys, monographs, etc.)

- Aranasov, B. N. ★ Дискретные группы преобразования и структуры многообразий. [Discrete transformation groups and structures on manifolds] 85i:57002  
 Bing, R. H. ★ The geometric topology of 3-manifolds. 85j:57001

## secondary classifications (57-02)

- Browder, William ★ Перестройки односвязных многообразий. (Russian) [Surgery on simply-connected manifolds] 85i:57009  
 Johnson, Dennis A survey of the Torelli group. 85d:57009  
 Madsen, Ib. (with Milgram, R. James) ★ Классифицирующие пространства для перестроек и кобордизмов многообразий. (Russian) [The classifying spaces for surgery and cobordism of manifolds] 85j:57022  
 Milgram, R. James See Madsen, Ib., 85j:57022  
 (Mishchenko, A. S.) See Browder, William, 85i:57009  
 Petrie, Ted (with Randall, John D.) ★ Transformation groups on manifolds. 85m:57026 (Postnikov, M. M.) See Madsen, Ib., 85j:57022  
 Randall, John D. See Petrie, Ted, 85m:57026  
 (Rudyak, Yu. B.) See Browder, William, 85i:57009 and Madsen, Ib., 85j:57022  
 (Sancho de San Román, Juan) See Viviente Mateu, José Luis, 85k:57032  
 Viviente Mateu, José Luis ★ Una excursión por la teoría de foliaciones. (Spanish) [An excursion through the theory of foliations] 85k:57032

## 57-03 Historical (must also be assigned at least one classification number from Section 01)

## secondary classifications (57-03)

- Mishchenko, A. S. New methods in algebraic and differential topology. (Russian) (See 85g:01004)  
 Methods of a stable algebra in problems of differential topology. (Russian) (See 85g:01004)  
 Reventós, Agustí From Riemann to the present. (Catalan) 85m:01050

## 57-04 Explicit machine computation and programs (not the theory of computation or programming)

## secondary classifications (57-04)

- Gillman, David (with Laszlo, Peter) A computer search for contractible 3-manifolds. 85b:57014  
 Hartley, Richard Identifying noninvertible knots. 85c:57003  
 Laszlo, Peter See Gillman, David, 85b:57014

## 57-06 Proceedings, conferences, etc.

- (Gordon, C. McA.) See Four-manifold theory, 85k:57001  
 (Kirby, Robion) See Four-manifold theory, 85k:57001  
 (Schults, Reinhard) See Group actions on manifolds, 85k:57002  
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AMS-IMS-SIAM, four-manifold theory ★ Four-manifold theory. 85k:57001  
AMS-IMS-SIAM, group actions on manifolds ★ Group actions on manifolds. 85k:57002

- Durham, N.H. ★ Four-manifold theory. 85k:57001  
 Four-manifold theory ★ Four-manifold theory. 85k:57001  
 Geometry and algebra of 3- and 4-manifolds ★ Geometry and algebra of 3- and 4-manifolds. 85g:57001  
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## Geometry and algebra of 3- and 4-manifolds ★ Geometry and algebra of 3- and 4-manifolds. 85g:57001

- Manifolds and fake surfaces ★ Manifolds and fake surfaces. (Japanese) 85h:57001  
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 Transformation groups and representation theory ★ Transformation groups and representation theory. 85b:57001

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- (Dazord, Pierre) See Seminar: South Rhone, geometry, 85g:58010a; 85g:58010b and 85g:58010c  
 (Desolneux-Moula, N.) See Seminar: South Rhone, geometry, 85g:58010a; 85g:58010b and 85g:58010c  
 (Madsen, Ib.) See Algebraic topology, 85g:55002  
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 Aarhus ★ Algebraic topology, Aarhus 1982. 85g:55002  
 Algebraic topology ★ Algebraic topology, Aarhus 1982. 85g:55002  
 Astérisque ★ III<sup>e</sup> rencontre de géométrie du Schnepfenried. Vol. 1. (French) [Third Schnepfenried geometry conference. Vol. 1] 85j:58004a  
 Conference:

## Algebraic topology ★ Algebraic topology, Aarhus 1982. 85g:55002

- Schnepfenried, geometry ★ III<sup>e</sup> rencontre de géométrie du Schnepfenried. Vol. 1. (French) [Third Schnepfenried geometry conference. Vol. 1] 85j:58004a  
 Transversal structure of foliations ★ Transversal structure of foliations. (French) 85j:57044

- Lyon ★ Séminaire sud-rhodanien de géométrie. I. (French) [South Rhone seminar on geometry. I] 85g:58010a

- Schnepfenried ★ III<sup>e</sup> rencontre de géométrie du Schnepfenried. Vol. 1. (French) [Third Schnepfenried geometry conference. Vol. 1] 85j:58004a

## Seminar:

South Rhone, geometry ★ Séminaire sud-rhodanien de géométrie. I. (French) [South Rhone seminar on geometry. I] 85g:58010a

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Transversal structure of foliations ★ Transversal structure of foliations. (French) 85j:57044

## 57Mxx Low-dimensional topology (old 55Axx)

## 57M05 Fundamental group, presentations, free differential calculus

Birman, J. S. (with Series, Caroline) An algorithm for simple curves on surfaces. 85m:57002

Cenk, Bohumil (with Porter, Richard) Differential forms and torsion in the fundamental group. 85k:57003

Hempel, John Homology of coverings. 85e:57001

Henry, Michel Les parties presque invariantes à droite du groupe fondamental d'une variété orientable de dimension 3. (English summary) [Almost right-invariant subsets of the fundamental group of an orientable compact 3-manifold] 85m:57003

Nguyễn Văn Dũng The fundamental groups of the spaces of regular orbits of the affine Weyl groups. 85f:57001

Porter, Richard See Cenk, Bohumil, 85k:57003

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Traldi, Lorenzo Milnor's invariants and the completions of link modules. 85j:57002

secondary classifications (57M05)

Brown, Ronald (with Heath, Philip R.; Kamps, Klaus Heiner) Groupoids and the Mayer-Vietoris sequence. 85j:55007

Collins, Donald J. (with Zieschang, Heiner) Rescuing the Whitehead method for free products. I. Peak reduction. 85i:20031a

(with Zieschang, Heiner) Rescuing the Whitehead method for free products. II. The algorithm. 85i:20031b

Crowell, R. H. The derived group of a permutation representation. 85m:20047

Fenn, Roger (with Sjerpe, D.) Duality and cohomology for one-relator groups. 85b:20070

Gersten, S. M. Intersections of finitely generated subgroups of free groups and resolutions of graphs. 85m:05037b

On Whitehead's algorithm. 85g:20051

On fixed points of certain automorphisms of free groups. 85k:20075a

Addendum: "On fixed points of certain automorphisms of free groups". 85k:20075b

Gorbachevich, V. V. A criterion for the existence of a natural fibering for a compact homogeneous manifold. (Russian) 85e:55015

Gutiérrez, M. On crossed modules. 85b:57003

Fenn, Roger See Sjerpe, D., 85b:20070

Kamps, Klaus Heiner See Brown, Ronald; et al., 85j:55007

Libgober, A. Alexander invariants of plane algebraic curves. 85h:14017

Myasnikov, A. G. Extended Nielsen transformations and the trivial group. (Russian) 85k:20076

Rolfen, Dale A stable group-pair invariant of three-dimensional manifolds. 85h:57013

Sjerpe, D. See Fenn, Roger, 85b:20070

Stallings, John R. Topology of finite graphs. 85m:05037a

Strebel, R. Explicit resolutions for the binary polyhedral groups and for other central extensions of the triangle groups. 85d:20046

Turayev, V. G. Fundamental groups of three-dimensional manifolds and Poincaré duality. (Russian) 85b:57016

Wajnryb, Bronisław A simple presentation for the mapping class group of an orientable surface. 85g:57007

Zieschang, Heiner See Collins, Donald J., 85i:20031a and 85i:20031b

## 57M10 Covering spaces

Apananov, B. N. Incomplete hyperbolic manifolds and local finiteness of space tessellation with polyhedra. (Russian) 85j:57003

secondary classifications (57M10)

Chen, Wen Yuan Local homeomorphisms and covering maps. (Chinese) 85e:55014

Clark, Bradd E. (with Schneider, Victor P.) All knot groups are metric. 85i:57003

Green, Edward L. Graphs with relations, coverings and group-graded algebras. 85a:16033

Jaasim, S. A. Finite abelian surface coverings. 85m:57024

Losano, Maria Teresa Arcbodies. 85e:57004

Schneider, Victor P. See Clark, Bradd E., 85i:57003

## 57M12 Special coverings, e.g. branched

Berstein, Israel (with Edmonds, Allan L.) On the classification of generic branched coverings of surfaces. 85k:57004

Edmonds, Allan L. Surface symmetry. II. 85e:57002

(with Kulkarni, Ravi S.; Stong, R. E.) Realizability of branched coverings of surfaces. 85k:57005

See also Bernstein, Israel, 85k:57004

Kulkarni, Ravi S. See Edmonds, Allan L.; et al., 85k:57005

Little, Robert D. Projective space as a branched covering of the sphere with orientable branch set. 85m:57004

Müller, Jeppier Michael Equivariant embeddings of principal  $Z_n$ -bundles into complex vector bundles. 85b:57002

Montesinos, José María Representing 3-manifolds by a universal branching set. 85c:57001

Smith, Larry Transfer and ramified coverings. 85f:57002

Stong, R. E. See Edmonds, Allan L.; et al., 85k:57005

secondary classifications (57M12)

Bleiler, Steven A. Knots prime on many strings. 85b:57003

Plotnick, Steven Finite group actions and nonseparating 2-spheres. 85f:57024

Soma, Teruhiko Atoroidal, irreducible 3-manifolds and 3-fold branched coverings of  $S^3$ . 85j:57018

Strickland, Paul Branched cyclic covers of simple knots. 85g:57013

## 57M15 Relations with graph theory [See also 05Cxx.]

secondary classifications (57M15)

Cavicchioli, Alberto (with Grasselli, Luigi; Pensana, Mario) A normal decomposition for closed  $n$ -manifolds. (Italian. English summary) 85j:57028

Grasselli, Luigi See Cavicchioli, Alberto; et al., 85j:57028

Hoffman, Peter (with Richter, Bruce) Embedding graphs in surfaces. 85d:05103

Kalai, Gil Enumeration of  $Q$ -acyclic simplicial complexes. 85a:55006

Mohar, Bojan Simplicial schemes and some combinatorial applications. 85j:05021

Pensana, Mario See Cavicchioli, Alberto; et al., 85j:57028

Pica, G. (with Pisanski, T.; Ventré, Aldo G. S.) The genera of amalgamations of cube graphs. (Slovenian summary) 85i:05094

Pisanski, T. (with Shawe-Taylor, John; Vrabec, Jože) Edge-colorability of graph bundles. 85b:05086

See also Pica, G.; et al., 85i:05094

Richter, Bruce See Hoffman, Peter, 85d:05103

Sachs, Horst On a spatial analogue of Kuratowski's theorem on planar graphs—an open problem. 85b:05077

Sarkaria, K. S. Addendum to my paper: "On coloring manifolds" [Illinois J. Math. 25 (1981), no. 3, 464–469; MR 82k:05050]. 85f:05059

Shawe-Taylor, John See Pisanski, T.; et al., 85b:05086

Ventré, Aldo G. S. See Pica, G.; et al., 85i:05094

Vince, Andrew Generalization of the cycle matroid of a graph. 85f:05050

Vrabec, Jože See Pisanski, T.; et al., 85b:05086

Zaks, Joseph Extending Kotzig's theorem. 85a:05033

## 57M20 Two-dimensional complexes

Bloch, Ethan D. (with Connelly, Robert; Henderson, David W.) The space of simplexwise linear homeomorphisms of a convex 2-disk. 85m:57005

Brandenburg, Joe (with Dyer, Michael; Strebel, R.) On J. H. C. Whitehead's aspherical question. II. 85g:57002

Connelly, Robert See Bloch, Ethan D.; et al., 85m:57005

Dyer, Michael See Brandenburg, Joe; et al., 85g:57002

Gritsmann, P. Der Bereich der  $f$ -Vektoren für polyedrische Realisierungen des Torus. [The domain of  $f$ -vectors for polyhedral realizations of the torus] 85h:57002

Gutiérrez, M. On crossed modules. 85b:57003

Henderson, David W. See Bloch, Ethan D.; et al., 85m:57005

Howie, James Some remarks on a problem of J. H. C. Whitehead. 85g:57003

Mikhailuk, E. A. The Whitehead conjecture. 85d:57001

Strebel, R. See Brandenburg, Joe; et al., 85g:57002

secondary classifications (57M20)

Brehm, Ulrich A nonpolyhedral triangulated Möbius strip. 85d:57017

Gritsmann, P. Upper and lower bounds of the valence-functional. 85b:52010

Howie, James (with Schneebeli, Hans Rudolf) Homological and topological properties of locally indicable groups. 85c:20041

Spherical diagrams and equations over groups. 85i:20040

Nakada, Hitoshi On a classification of PL-homeomorphisms of a circle. 85k:58050

Schneebeli, Hans Rudolf See Howie, James, 85c:20041

Spies, Stanisław On a shape characterization of some two-polyhedra. 85e:57017

Wajnryb, Bronisław A simple presentation for the mapping class group of an orientable surface. 85g:57007

Wills, J. M. Reguläre polyedrische Mannigfaltigkeiten. [Regular polyhedral manifolds] 85h:57022

57M25 Knots and links in  $S^3$  [For higher dimensions, see 57Q45.]

Altin, Yılmaz (with Boshuyük, M. Emin) Some properties of shepherd's knots. (Turkish. English summary) 85k:57006

Ammann, André Sur les nœuds représentables comme tresses à trois brins. [Knots representable as braids with three strands] 85b:57004

Artin, Emil Theory of braids. (Portuguese) (Not in MR)

Bodient, Richard E. Double branched covers and pretzel knots. 85f:57003

Bleiler, Steven A. A note on unknotting number. 85m:57006

Knots prime on many strings. 85h:57003

Boileau, Michel (with Weber, Claude) Le problème de J. Milnor sur le nombre gordien des nœuds algébriques. [J. Milnor's problem on the Gordian number of algebraic knots] 85g:57004

Bonahon, Francis Ribbon fibred knots, cobordism of surface diffeomorphisms and pseudo-Anosov diffeomorphisms. 85h:57004

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- Casson, A. J. (with Gordon, C. McA.) A loop theorem for duality spaces and fibred ribbon knots. 85c:57002
- Clark, Bradd E. Knots with property  $R^+$ . 85g:57005  
(with Schneider, Victor P.) All knot groups are metric. 85i:57003
- Conway, John H. (with Gordon, C. McA.) Knots and links in spatial graphs. 85d:57002
- Dowker, C. H. (with Thistlethwaite, Morwen B.) Classification of knot projections. 85c:57003
- Francis, George K. Drawing Seifert surfaces that fiber the figure-8 knot complement in  $S^3$  over  $S^1$ . 85h:57006
- Furusawa, Satoshi (with Sakuma, Makoto) Dehn surgery on symmetric knots. 85k:57007
- Gabal, David The Murasugi sum is a natural geometric operation. 85d:57003
- Gilmer, Patrick M. Slice knots in  $S^3$ . 85d:57004
- Gordon, C. McA. See Casson, A. J., 85c:57003 and Conway, John H., 85d:57002
- Hanner, Olof Knots which cannot be untied. (Swedish. English summary) 85a:57001
- Hartley, Richard The Conway potential function for links. 85h:57006  
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- Hillman, Jonathan A. On the Alexander polynomial of a cyclically periodic knot. 85b:57006
- Kenomoto, Taiso Alexander polynomials of two-bridge links. 85g:57006
- Kaufman, Louis H. ★ Formal knot theory. 85b:57006  
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- Kawauchi, Akio (with Murakami, Hitoshi; Sugishita, Kouji) On the  $T$ -genus of knot cobordism. 85c:57004  
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- Bris, Matthew G. Curves isotopic to tame curves. 85b:57017

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 Fintushel, Ronald (with Stern, Ronald J.) Seifert fibered 3-manifolds and nonorientable 4-manifolds. 85c:57011  
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 Daverman, Robert J. (with Walsh, J. J.) Examples of cell-like maps that are not shape equivalences. 85g:57008  
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# 57Sxx Topological transformation groups [See also 20F34, 22-XX, 54H15, 58D05.]

## secondary classifications (57Sxx)

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- Hermann, Robert (with Martin, Clyde F.) Lie theory of transformation groups and the parameterization and identification of linear systems. 85g:93025
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- Stowe, Dennis Smoothing the generators of a Lie group of transformations. 85d:57033
- Strub, Rainer Local classification of quotients of smooth manifolds by nondiscontinuous groups. 85g:58015
- Uchida, Fuchi On a Lie algebra of real analytic vector fields. 85h:58140
- 57S25 Groups acting on specific manifolds**
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- Castellano, B. Michael The fixed point conjecture and monoids on a manifold with boundary. 85d:57037
- Edmonds, Allan L. (with Livingston, Charles) Group actions on fibered three-manifolds. 85k:57037
- Fintushel, Ronald (with Pao, Peter Sie) Circle actions on homotopy spheres with codimension 4 fixed point set. 85f:57025
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- Asoh, Tohl Supplement to: "Compact transformation groups on  $Z_2$ -cohomology spheres with orbit of codimension 1" [Hiroshima Math. J. 11 (1981), no. 3, 571-616; MR 83b:57021]. 85f:57023
- Assadi, Amir H. (with Burghela, D.) Symmetry of manifolds and their lower homotopy groups. 85c:57041
- Browder, William Cohomology and group actions. 85m:57022a
- Addendum and erratum: "Cohomology and group actions". 85m:57022b
- Burghela, D. See Assadi, Amir H., 85c:57041
- Cappell, Sylvain E. (with Shaneson, Julius L.) Class numbers and periodic smooth maps. 85e:57049
- Clark, Bradd E. (with Ritter, Gerhard X.) Periodic homeomorphisms on  $S^3$  and cubes with torus knotted holes. 85k:57036
- Dain, T. Y. (with Kim, Soon Kyu) On tubular neighborhoods of fixed points of locally smooth actions. 85b:57044
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- Dold, A. Simple proofs of some Borsuk-Ulam results. 85e:55003
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- Feighn, M. E. Actions of finite groups on homotopy 3-spheres. 85m:57023
- Hartley, Richard Whitehead torsion and the Smith conjecture. 85c:57024
- Hoffman, Michael On fixed point free maps of the complex flag manifold. 85j:57062
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- Luft, E. (with Sjerve, D.) Involutions with isolated fixed points on orientable 3-dimensional flat space forms. 85j:57017
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- secondary classifications (57S30)
- Brunner, A. M. (with Frame, Michael L.; Lee, Youn W.; Wielenberg, Norbert J.) Classifying torsion-free subgroups of the Picard group. 85b:57012
- Frame, Michael L. See Brunner, A. M.; et al., 85b:57012
- Goldman, William M. (with Kamishima, Yoshinobu) The fundamental group of a compact flat Lorentz space form is virtually polycyclic. 85i:53064
- Kamishima, Yoshinobu See Goldman, William M., 85i:53064
- Lee, Youn W. See Brunner, A. M.; et al., 85b:57012
- Wielenberg, Norbert J. See Brunner, A. M.; et al., 85b:57012
- 57S99 None of the above, but in this section**
- Kuang, Liang Hao Properties of manifolds for which the transformation group has a stabilizer which is an invariant subgroup. (Chinese. English summary) 85j:57066
- Nambodiri, Unni Equivariant vector fields on spheres. 85f:57026
- Seymour, R. M. Some functional constructions on  $G$ -spaces. 85a:57021
- Szenthe, János The notion of slices in the theory of transformation groups. (Hungarian) 85j:57067
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- Akhiezer, D. N. Estimate of the dimension of the automorphism group of a compact complex homogeneous space. (Russian. English and Georgian summaries) 85k:33055
- Bojanowska, Agnieszka The spectrum of equivariant  $K$ -theory. 85a:55003
- Brown, Kenneth S. Presentations for groups acting on simply-connected complexes. 85k:20100
- Dancer, E. Norman Perturbation of zeros in the presence of symmetries. 85g:58027
- Dold, A. Fixed point indices of iterated maps. 85c:54077
- Hoare, A. H. M. (with Singerman, D.) The orientability of subgroups of plane groups. 85g:20061
- Kupka, Ivan A. K. (with Sallet, Gauthier) A sufficient condition for the transitivity of pseudosemigroups: application to system theory. 85b:58116
- Kwasik, Sławomir On equivariant finiteness. 85g:57011
- Macbeath, A. M. Commensurability of co-compact three-dimensional hyperbolic groups. 85f:22013
- Mann, Benjamin M. (with Miller, Edward Y.) Characteristic classes for spherical fibrations with fibre-preserving free group actions. 85b:55016
- McClure, James E. On the groups  $JOGX$ . I. 85g:55021
- van Mill, Jan A topological group having no homeomorphisms other than translations. 85b:22005
- Miller, Edward Y. See Mann, Benjamin M., 85b:55016
- Montgomery, Deane Remark on continuous collections. 85d:54046
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- Stowe, Dennis Real analytic actions of  $SL(2, \mathbb{R})$  on a surface. 85j:58090  
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## 57Txx Homology and homotopy of topological groups and related structures

### 57T05 Hopf algebras [See also 16A24.]

secondary classifications (57T05)

- Avramov, Luchezar (with Halperin, S.) On the structure of the homotopy Lie algebra of a local ring. (See 85d:55001)  
 Halperin, S. See Avramov, Luchezar, (85d:55001)  
 Kosima, Kazumoto The Hopf algebra structure of  $MU_*(\Omega Sp(n))$ . 85b:55004

### 57T10 Homology and cohomology of Lie groups

- Milner, J. On the homology of Lie groups made discrete. 85b:57050  
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- Blanc, P. (with Wigner, D.) Homology of Lie groups and Poincaré duality. 85g:22023  
 Deo, Satya (with Palanichamy, P.) On orbit spaces of compact group actions. 85e:54045  
 Haefliger, A. The homology of nilpotent Lie groups made discrete. 85b:22018  
 Palanichamy, P. See Deo, Satya, 85e:54045  
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### 57T15 Homology and cohomology of homogeneous spaces of Lie groups

- Broughton, S. Allen (with Hoffman, Michael; Homer, William) The height of two-dimensional cohomology classes of complex flag manifolds. 85f:57037  
 Costinescu, Cristian Nicolae K-theory of some symmetric spaces. (Romanian. English summary) 85e:57049  
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 Singh Varma, H. O. The integral cohomology of certain homogeneous spaces. 85f:57029  
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- Brown, Stephen (with Homer, William) Rational automorphisms of Grassmann manifolds. 85b:55033  
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### 57T20 Homotopy groups of topological groups and homogeneous spaces

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- Lundell, Albert T. The p-equivalence of  $SO(2n+1)$  and  $Sp(n)$ . 85e:55030  
 Nguyễn Việt Dũng The fundamental groups of the spaces of regular orbits of the affine Weyl groups. 85f:57001  
 Nicas, A. J. (with Stark, C. W.) Whitehead groups of certain hyperbolic manifolds. 85k:18018b  
 (with Stark, C. W.) Higher Whitehead groups of certain bundles over Seifert manifolds. 85k:18018a  
 Stark, C. W. See Nicas, A. J., 85k:18018a and 85k:18018b

### 57T25 Homology and cohomology of H-spaces

- Harper, John R. (with Zabrodsky, A.) Alteration of H-structures. 85e:57050  
 Zabrodsky, A. See Harper, John R., 85e:57050

### 57T30 Bar and cobar constructions [See also 18G55, 55Uxx.]

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- Hain, Richard M. Iterated integrals and homotopy periods. 85d:55015  
 Prouté, Alain Un contre-exemple à la géométrie du shuffle-coproduct de la cobar-construction. (English summary) [A counterexample to the geometricity of the shuffle coproduct in the cobar-construction] 85b:55012

### 57T99 None of the above, but in this section

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- Charney, Ruth M. (with Lee, Ronnie) Cohomology of the Satake compactification. 85k:32061  
 Costinescu, Cristian Nicolae La suite spectrale Atiyah-Hirzebruch et le calcul des  $K_G$ -groupes. [The Atiyah-Hirzebruch spectral sequence and the calculation of  $K_G$ -groups] 85e:55009  
 Gonçalves, Daciberg Lima The mod-5 splitting of the compact exceptional Lie group  $E_6$ . 85e:55026  
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 Papadima, Ștefan On the formality of maps. 85e:55011  
 Singh, Sukhjot Group-like structures and the Whitehead product in prohomotopy and shape. 85j:55020  
 Yasuo, Minato On the spaces  $O(4n)/Sp$  and  $Sp(n)/O$ , and the Bott maps. 85j:55034  
 Zucker, Steven W.  $L_2$ -cohomology and intersection homology of locally symmetric varieties. 85a:58005

## 58-XX GLOBAL ANALYSIS, ANALYSIS ON MANIFOLDS

[See also 32Cxx, 32Fxx, 46-XX, 47Hxx, 53Cxx; for geometric integration theory, see 49F20, 49F22.]

### 58-01 Elementary exposition; textbooks

- Aves, A. ★ Calcul différentiel. (French) [Differential calculus] 85e:58001  
 (Boll, Ludwig) See Dieudonné, J., 85f:58001  
 Byrnes, C. A brief tutorial on calculus on manifolds, with emphasis on applications to identification and control. 85e:58002  
 do Carmo, Manfredo P. ★ Formas diferenciais e aplicações. (Portuguese) [Differential forms and applications] 85j:58001  
 Dieudonné, J. ★ Grundlehren der modernen Analysis. 8. (German) [Foundations of modern analysis. 8] 85f:58001  
 Dorodnitsyn, V. A. (with Elenin, G. G.) ★ Симметрия в решениях уравнений математической физики. (Russian) [Symmetry in solutions of equations of mathematical physics] 85i:58001  
 Elenin, G. G. See Dorodnitsyn, V. A., 85i:58001  
 Lang, Serge ★ Differential manifolds. 85m:58001  
 (Leão, Rubens) See do Carmo, Manfredo P., 85j:58001  
 Petukhov, V. R. ★ Групповой анализ обыкновенных дифференциальных уравнений. (Russian) [Group analysis of ordinary differential equations] 85b:58001  
 Valitakli, Yu. N. ★ Элементы анализа на многообразиях. (Russian) [Elements of analysis on manifolds] 85g:58001

secondary classifications (58-01)

- Arnold, V. I. ★ Catastrophe theory. 85e:58023  
 Arrowsmith, D. K. (with Place, C. M.) ★ Ordinary differential equations. 85a:34001  
 (Burns, R. G.) See Dubrovina, B. A.; et al., 85a:53003  
 (Chern, Shing Shen) See de Rham, Georges, 85m:58005  
 Dubrovina, B. A. (with Fomenko, A. T.; Novikov, S. P.) ★ Modern geometry—methods and applications. Part I. 85a:53003  
 Fomenko, A. T. See Dubrovina, B. A.; et al., 85a:53003  
 Grunsky, Helmut ★ The general Stokes' theorem. 85j:26017  
 Guckenheimer, John Toolkit for nonlinear dynamics. 85a:58025  
 Joseph, Daniel D. Stability and bifurcation theory. 85d:58050  
 Lanford, Oscar E., III Introduction to the mathematical theory of dynamical systems. 85e:58040  
 Lehmann, Daniel ★ Géométrie et topologie des surfaces. (French) [Geometry and topology of surfaces] 85i:53001  
 Lichnerowicz, André Géométrie et physique. [Geometry and physics] (See 85k:83002)  
 Matocsi, T. ★ A concept of mathematical physics: models for space-time. 85m:53086  
 Nikol'skii, S. M. ★ Курс математического анализа. Том II. [Course in mathematical analysis. Vol. II] 85f:00001b  
 Novikov, S. P. See Dubrovina, B. A.; et al., 85a:53003  
 Place, C. M. See Arrowsmith, D. K., 85a:34001  
 de Rham, Georges ★ Differentiable manifolds. 85m:58005  
 (Sacré, Carlos) See Lehmann, Daniel, 85i:53001  
 Schwartz, Laurent ★ Cours d'analyse. 1. (French) [Course in analysis. 1] 85d:00001a  
 ★ Cours d'analyse. 2. (French) [Course in analysis. 2] 85d:00001b  
 (Smith, F. R.) See de Rham, Georges, 85m:58005  
 (Thomas, R. K.) See Arnold, V. I., 85e:58023  
 Tóth, Gábor On the Atiyah-Singer index theorem. IV. Grassmann manifolds and classification of principal bundles. (Hungarian) 85c:58100  
 Ver Eecke, Paul ★ Fondements du calcul différentiel. (French) [Foundations of differential calculus] 85i:26001

### 58-02 Advanced exposition (research surveys, monographs, etc.)

- Aubin, Thierry ★ Nonlinear analysis on manifolds. Monge-Ampère equations. 85j:58002  
 Berger, Melvyn S. Creation and breaking of self-duality symmetry—a modern aspect of calculus of variations. 85b:58002  
 Blanchard, Paul Complex analytic dynamics on the Riemann sphere. 85h:58001  
 Craioveanu, M. (with Puta, Mircea) ★ Introducere în geometria spectrală. (Romanian) [Introduction to spectral geometry] 85m:58002  
 Guckenheimer, John (with Holmes, Philip) ★ Nonlinear oscillations, dynamical systems, and bifurcations of vector fields. 85f:58002  
 Holmes, Philip See Guckenheimer, John, 85f:58002

- Ibragimov, N. Kh. ★ Группы преобразования в математической физике. (Russian) [Transformation groups in mathematical physics] 85j:58003  
 McLarty, Colin Local, and some global, results in synthetic differential geometry. 85c:58003  
 Puta, Mircea See Craioveanu, M., 85m:58002  
 Ritala, Risto (with Salomaa, Martti) Chaotic dynamics. (Finnish. English summary) 85a:58001  
 Salomaa, Martti See Ritala, Risto, 85a:58001

## secondary classifications (58-02)

- Antman, Stuart S. The influence of elasticity on analysis: modern developments. 85f:01005  
 Berry, Michael Semiclassical mechanics of regular and irregular motion. 85f:58033  
 Blattner, R. J. On geometric quantization. (See 85d:58001)  
 (Bocharov, A. V.) See Pommaret, J.-F., 85j:58151  
 Chenciner, A. Bifurcations de difféomorphismes de  $\mathbb{R}^2$  au voisinage d'un point fixe elliptique. [Bifurcations of diffeomorphisms of  $\mathbb{R}^2$  in the neighborhood of a fixed elliptic point] 85j:58114  
 Collet, P. (with Koch, Hans) Renormalization group analysis for dynamical systems. (See 85d:82004)  
 (Fathi, Albert) See Herman, Michael-Robert, 85m:58062  
 Fomenko, A. T. ★ Вариационные методы в топологии. (Russian) [Variational methods in topology] 85k:58017  
 (Gelbaum, Bernard R.) See Postnikov, M. M., 85a:58018  
 Guckenheimer, John Multiple bifurcation problems of codimension two. 85g:58063  
 Haken, Hermann ★ Synergetics: an introduction. 85e:00030  
 Hale, Jack Infinite-dimensional dynamical systems. 85d:58026  
 Herman, Michael-Robert ★ Sur les courbes invariantes par les difféomorphismes de l'anneau. Vol. I. (French) [On the curves invariant under diffeomorphisms of the annulus. Vol. I] 85m:58062  
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- Arnol'd, V. I. Problems on the frontier of mathematical research. (Russian) (See 85g:01004)  
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- Bishop, A. R. (with Fesser, K.; Lomdahl, P. S.; Kerr, W. C.; Williams, Mark Bennett; Trullinger, S. E.) Coherent spatial structure versus time chaos in a perturbed sine-Gordon system. 85a:58002  
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- Arneodo, A. (with Sornette, D.) Monte Carlo random-walk experiments as a test of chaotic orbits of maps of the interval. 85d:58063  
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- (with Schmitt, T.) Pseudodifferential operators and the index theorem on supermanifolds. 85j:58139
- (Rosenblum, A.) See Mathematical aspects of superspace, 85i:58002
- Schmitt, T. See Rempel, S., 85c:58009 and 85j:58139
- (Selfert, H.-J.) See Mathematical aspects of superspace, 85i:58002
- Semikhatov, A. M. The supersymmetric instanton. 85d:81147
- Shvarts, A. S. See Baranov, M. A., 85k:58004
- Trostel, Robert Generalized Grassmannian analysis, vector-valued differential forms on Banach spaces, and generalized variational selfadjointness. 85h:58064
- Valntrub, A. Yu. Deformations of complex structures on supermanifolds. (Russian) 85h:37041
- Hamburg ★ Mathematical aspects of superspace. 85i:58002
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- Workshop:
- NATO, mathematical aspects of superspace ★ Mathematical aspects of superspace. 85i:58002

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- Ne'eman, Yuval Internal supergauge. 85d:81183
- Noriega, R. J. (with Schifini, C. G.) On scalar concomitance operators. 85c:53029
- Schifini, C. G. See Noriega, R. J., 85c:53029
- Sciuto, Stefano Reduction of supersymmetric  $\sigma$ -models on graded manifolds. 85a:81069
- Yamazuro, Sadyuki A remark on regularly separated closed sets. 85i:48008

## 58Bxx Infinite-dimensional manifolds

### 58B05 Homotopy and topological questions

- Nikolenko, P. V. Homotopy groups of some spaces of matrix-functions and the stability of a system of partial indices of a family of matrix-functions. (Russian) 85f:58005

secondary classifications (58B05)

- Borisovich, Yu. G. (with Gliklikh, Yu. E.) Topological theory of fixed points on infinite-dimensional manifolds. (Russian) 85i:58026
- Chapman, T. A. A general approximation theorem for Hilbert cube manifolds. 85e:57016
- Dijkstra, J. J. ★ Fake topological Hilbert spaces and characterizations of dimension in terms of negligibility. 85h:57017
- Fomin, V. E. Pulverizations on Banach manifolds and some of their properties. (Russian) 85g:58023
- Gliklikh, Yu. E. See Borisovich, Yu. G., 85i:58026
- Graham, George Differentiable manifolds with generalized boundary. 85c:58013
- Rendi, B. See Rendi, D., 85h:58004
- Rendi, D. (with Rendi, B.) Fiber bundles of function algebras and attached structures. 85h:58004
- Sakai, Katsuro Each  $\mathbb{R}^\infty$ -manifold has a unique piecewise linear  $\mathbb{R}^\infty$ -structure. 85j:57020

### 58B10 Differentiability questions

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- Prölicher, Alfred (with Gisin, Bernard; Kriegl, Andreas) General differentiation theory. 85f:58008
- Gisin, Bernard See Prölicher, Alfred; et al., 85f:58008
- Kriegl, Andreas Eine kartesisch abgeschlossene Kategorie glatter Abbildungen zwischen beliebigen lokal konvexen Vektorräumen. (English summary) [A Cartesian-closed category of smooth mappings between arbitrary locally convex vector spaces] 85e:58018
- See also Prölicher, Alfred; et al., 85f:58008
- Rendi, B. Differentiable maps on differential structures of commutative Banach algebras. I. (Romanian summary) 85i:46006

### 58B12 Questions of holomorphy [See also 32-XX, 46G20.]

- Aurich, Volker Bounded holomorphic embeddings of the unit disk into Banach spaces. 85b:58012
- Fujimoto, Yoshihisa Cohomology groups in the Cartesian product of countably infinite number of complex planes. 85j:58024
- Leslie, Joshua A. On the group of real analytic diffeomorphisms of a compact real analytic manifold. 85e:58012

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- Colombeau, J.-F. (with Paques, Otilia Wiermann) Structure of spaces of  $C^\infty$ -functions on nuclear spaces. 85b:46051
- Kiselman, Christer O. Croissance des fonctions plurisubharmoniques en dimension infinie. (English summary) [Growth of plurisubharmonic functions in infinite dimensions] 85i:32028
- Paques, Otilia Wiermann See Colombeau, J.-F., 85b:46051

### 58B15 Fredholm structures [See also 47A53.]

- Borisovich, Yu. G. (with Zvyagin, V. G.) Perturbations of nonlinear Fredholm operators and application to boundary value problems. (Russian) 85m:58022
- Krein, M. N. Semidifferentiable Fredholm mappings. (Russian) 85b:58013
- Ratiner, N. M. On the theory of the degree of Fredholm mappings of a manifold. (Russian) 85d:58007
- Zvyagin, V. G. See Borisovich, Yu. G., 85m:58022

secondary classifications (58B15)

- Khimshiashvili, G. N. Fredholm analytic sets and branching of solutions of nonlinear equations. (Russian. English and Georgian summaries) 85e:47089
- Naidenova, M. Uniform Fredholm complexes. (Bulgarian. English and Russian summaries) 85h:55022
- Ratiner, N. M. On the theory of the degree of Fredholm mappings of nonnegative index on a convex domain of a Banach space. (Russian) 85e:58026

### 58B20 Riemannian, Finsler and other geometric structures [See also 53C20, 53C60.]

- Anastasiel, Mihai Some existence theorems in Finsler geometry. 85e:58009
- de Barros, Constantino M. La théorie des repères mobiles et des formes différentielles quadratiques en espaces banachiques. [The theory of moving frames and quadratic differential functions in Banach spaces] 85h:58017
- Cirelli, R. (with Lanzavecchia, P.; Manià, Alessandro) Normal pure states of the von Neumann algebra of bounded operators as Kähler manifold. 85e:58010
- Hahti, Heikki Projection-valued functions and their linear connexions on surfaces in a Banach space. 85m:58023
- Kalton, N. J. The space  $Z_2$  viewed as a symplectic Banach space. 85e:58013
- Lanzavecchia, P. See Cirelli, R.; et al., 85e:58010
- Mänttä, Eijas On the Frenet theory of plane fields in Hilbert space. 85k:58009
- Manià, Alessandro See Cirelli, R.; et al., 85e:58010
- Ravaska, Timo On the extension of a parallel translation to a Banach space operator. 85j:58025
- Vassiliou, E. Conjugate connections and ordinary differential equations. 85a:58010

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- Anastasiel, Mihai Some existence theorems in Finsler geometry. (French and Romanian summaries) 85i:53073
- Fischer, Arthur E. (with Tromba, Anthony J.) On the Weil-Petersson metric on Teichmüller space. 85m:32016
- Tromba, Anthony J. See Fischer, Arthur E., 85m:32016
- Volovich, I. V. Super-self-duality equations. (Russian. English summary) 85f:81075

### 58B25 Group structures and generalizations on infinite-dimensional manifolds [See also 22E65, 58D05.]

- Grabowski, Janusz Groups of diffeomorphisms and Lie theory. 85h:58018
- Shimomura, Hiroaki Quasi-invariant measures on the orthogonal group over the Hilbert space. 85e:58014

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- Graham, George Differentiable semigroups. 85a:22003
- Karube, Takashi Bundle structure of the homeomorphism groups of locally compact homogeneous spaces. 85b:57039
- Kholina, G. G. One-parameter subgroups of differentiable locally convex group chunks. (Russian) 85c:46041
- Kobayashi, Osamu See Omori, Hideki; et al., 85h:22024 and 85h:22025
- Maeda, Yoshiaki See Omori, Hideki; et al., 85h:22024 and 85h:22025
- van Mill, Jan A topological group having no homeomorphisms other than translations. 85b:22005
- Omori, Hideki (with Maeda, Yoshiaki; Yoshioka, Akira; Kobayashi, Osamu) On regular Fréchet-Lie groups. V. Several basic properties. 85h:22024
- (with Maeda, Yoshiaki; Yoshioka, Akira; Kobayashi, Osamu) On regular Fréchet-Lie groups. VI. Infinite-dimensional Lie groups which appear in general relativity. 85h:22025
- Smolentsev, N. K. A group of diffeomorphisms that leaves a vector field fixed. (Russian) 85e:58028
- Yoshioka, Akira See Omori, Hideki; et al., 85h:22024 and 85h:22025

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Gauchman, Hillel Connection colligations of the second order. 85f:58006

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Aripov, R. G. A problem of the theory of invariants in a Banach space of sequences. (Russian) 85i:46030

Fischer, Arthur E. (with Tromba, Anthony J.) Almost complex principal fiber bundles and the complex structure on Teichmüller space. 85m:32017

Tromba, Anthony J. See Fischer, Arthur E. 85m:32017

Young, Nicholas J. Orbits of the unit sphere of  $L(N, K)$  under symplectic transformations. 85k:47032

## 58Cxx Calculus on manifolds; nonlinear operators [See also 47Hxx.]

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Pourciau, B. H. Global properties of proper Lipschitzian maps. 85h:58019

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## 58C06 Set valued and function-space valued mappings

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Light, W. A. (with Holland, S. M.) The  $L_1$ -version of the Diliberto-Straus algorithm in  $C(T \times S)$ . 85j:41067

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## 58C07 Continuity properties of mappings

Foot, Robert L. Regularity of the distance function. 85m:58024

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Carr, Jack (with Mallet-Paret, John) Smooth homotopies for finding zeros of entire functions. 85j:58026

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Kupsch, J. See Gangal, A. D., 85g:81190

Madgerova, Andreana S. On some algebras of complex-valued functions on differentiable manifolds. 85j:46089

Paques, Otilia Wiermann See Colombeau, J.-F., 85b:46051 and 85f:46084

## 58C15 Implicit function theorems; global Newton methods

Balabanov, V. A. On the theory of implicit functions in pseudotopological vector spaces. (Russian. English summary) 85f:58007

Kuranishi, M. The Nash-Moser inverse mapping theorem. (See 84i:35003)

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Miller, John D. Some global inverse function theorems. 85e:58016

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Bryant, Robert L. (with Griffiths, Phillip A.; Yang, Deane) Characteristics and existence of isometric embeddings. 85d:53027

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Egikyan, R. S. (with Zhidkov, E. P.) ★ К теории непрерывного аналога метода Ньютона. (Russian) [On the theory of a continuous analogue of Newton's method] 85m:65053

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Graham, George Differentiable manifolds with generalized boundary. 85c:58013

Griffiths, H. B. The implicit function theorem—technique versus understanding. (Not in MR)

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Wegmann, R. Local existence and uniqueness theorems for a free boundary problem. 85m:31065

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## 58C20 Differentiation theory (Gâteaux, Fréchet, etc.) [See also 26Exx, 46Gxx.]

Borisenko, O. F. (with Minchenko, L. I.) Directional differentiability of the maximum function. (Russian) 85d:58009

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Hiriart-Urruty, J.-B. Limiting behaviour of the approximate first order and second order directional derivatives for a convex function. 85f:58009

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Thibault, Lionel On generalized differentials and subdifferentials of Lipschitz vector-valued functions. 85e:58020

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Chen, Guang Ya Closure of effective subdifferential mappings of vector-valued functions. (Chinese) (Not in MR)

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- Gähler, S. Contributions to optimization on manifolds. 85e:90098
- Gorokhovik, V. V. Quasidifferentiability of real-valued functions and conditions for a local extremum. (Russian) 85k:90129
- Hamilton, E. P. (with Nashed, M. Zuhair) Variational derivatives and  $p$ -gradients of functionals on spaces of continuously differentiable functions. 85c:49009
- Ioffe, A. D. Necessary conditions in nonsmooth optimization. 85h:49043
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- Marques, M. D. P. M. Dualité et sous-différentiabilité de fonctionnelles construites au moyen d'un opérateur divergence. [Duality and subdifferentiability of functionals constructed by means of a divergence operator] 85k:46050
- Michel, Philippe (with Penot, Jean-Paul) Calcul sous-différentiel pour des fonctions lipchitziennes et non lipchitziennes. (English summary) [Subdifferential calculus for Lipschitzian and non-Lipschitzian functions] 85i:49027
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- Zajček, Luděk A generalization of an Ekeland-Lebourg theorem and the differentiability of distance functions. 85k:49046
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- Bromberg, Shirley An extension theorem in the class  $C^1$ . (Spanish) 85k:58011
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- Bos, Len On Kergin interpolation in the disk. 85b:41001
- Ciesielski, Z. (with Figiel, T.) Spline bases in classical function spaces on compact  $C^\infty$  manifolds. I. 85f:46060a
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- 58C27 Singularities of differentiable maps [See also 14B05, 14E15, 32Bxx, 32C40, 32C45.]
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- Bierstone, Edward (with Milman, Pierre D.) Algebras of composite differentiable functions. 85i:58012
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- Remarks on the paper: "Boundary conditions for condensing mappings" [Nonlinear Anal. 8 (1984), no. 3, 209-219] by Q. Y. Yu and Browder. 85j:47062b
- See also Yu, Qing Yu, 85j:47062a
- Chan, Tony F. Newton-like pseudo-arclength methods for computing simple turning points. 85h:65126
- Conley, C. (with Zehnder, E.) The Birkhoff-Lewis fixed point theorem and a conjecture of V. I. Arnold. 85e:58044
- Cosnard, Michel (with Masse, Christophe) Convergence presque partout de la méthode de Newton. (English summary) [Almost everywhere convergence of Newton's method] 85b:65039
- Dancer, E. Norman Breaking of symmetries for forced equations. 85g:58026
- (Emel'yanov, S. V.) See Todd, Michael J., 85c:90083
- Fried, David Periodic points and twisted coefficients. 85h:58142
- Gangal, A. D. (with Kupch, J.) Determination of the scattering amplitude. 85g:81190
- Hansen, Mark C. See Watson, L. T.; et al., 85i:65070
- Holzer, Seigfried M. See Watson, L. T.; et al., 85i:65070
- Howe, Roger (with Stone, Richard E.) Linear complementarity and the degree of mappings. 85k:90152
- Isé, A. F. On a fixed point index method for the analysis of the asymptotic behavior and boundary value problems of process and semidynamical systems. 85b:58111
- (Kichatov, Yu. F.) See Todd, Michael J., 85c:90083
- Kupch, J. See Gangal, A. D., 85g:81190
- Li, Tien Yien See Alexander, J. C.; et al., 85m:58044
- Lloyd, Noel G. A survey of degree theory: basis and development. 85b:47064
- Masse, Christophe See Cosnard, Michel, 85b:65039
- Min, Le Quan A topological degree for quasi-A-proper mappings. (Chinese. English summary) 85e:47076
- Prüfer, Michael Sub- and supersolutions for nonlinear operators: problems of monotone type. 85i:90126
- Saint-Raymond, Jean Points fixes des multiapplications à valeurs convexes. (English summary) [Fixed points of multivalued maps with convex values] 85e:47083
- Shevchuk, L. B. See Babich, M. D., 85k:65044
- Stone, Richard E. See Howe, Roger, 85k:90152
- Todd, Michael J. ★ Вычисление неподвижных точек и приложения к экономике. (Russian) [The computation of fixed points and applications to economics] 85c:90083
- J': a new triangulation of  $R^n$ . 85d:90097
- See also Awoniyi, Samuel A., 85a:90186
- Wang, Shi Cheng (with Xue, Tong) Fixed-point sets of diffeomorphisms on compact differential manifolds. (Chinese) 85j:57050
- Watson, L. T. Engineering applications of the Chow-Yorke algorithm. 85h:90112
- (with Holzer, Seigfried M.; Hansen, Mark C.) Tracking nonlinear equilibrium paths by a homotopy method. 85i:65070
- Xue, Tong See Wang, Shi Cheng, 85j:57050
- Yorke, James A. See Alexander, J. C.; et al., 85m:58044
- Yu, Qing Yu (with Browder, Felix E.) Boundary conditions for condensing mappings. 85j:47062a
- See also Browder, Felix E., 85j:47062b
- Zehnder, E. See Conley, C., 85e:58044

## 58C35 Integration on manifolds; measures on manifolds [See also 28Cxx.]

- Praasad, V. S. A mapping theorem for Hilbert cube manifolds. 85c:58024

secondary classifications (58C35)

- Albinus, Günter Mathematische Aspekte der Funktionalintegration. [Mathematical aspects of functional integration] 85i:58030

- Cenkli, Bohuml (with Porter, Richard) de Rham theorem with cubical forms. 85j:58009
- Gallavotti, G. Elliptic operators and Gaussian processes. 85b:60061
- Gol'dshtein, V. M. (with Kur'minov, V. I.; Shvedov, I. A.) The Wolf theorem for differential forms of classes  $W_{p,q}^s$ . (Russian) 85a:58003
- Griewank, A. (with Reddien, G. W.) The calculation of Hopf points by a direct method. 85b:65104
- Keilhauer, Guillermo G. R. Generalisation of the Fubini theorem in Riemannian manifolds. (Spanish. English summary) 85j:28004
- Kur'minov, V. I. See Gol'dshtein, V. M.; et al., 85a:58003
- Lints, R. G. Carathéodory and Radon measures in Gauss spaces. 85i:28004
- Norin, N. V. Heat potentials on a Hilbert space. (Russian) 85i:48059
- Pfeffer, Washek Frank The generalised Riemann integral in higher dimensions. 85g:26006
- Porter, Richard See Cenkli, Bohuml, 85j:58009
- Reddien, G. W. See Griewank, A., 85b:65104
- Shvedov, I. A. See Gol'dshtein, V. M.; et al., 85a:58003
- Takahashi, Yasuji Kernels of cylindrical measures on locally convex Hausdorff spaces. 85i:46060
- Zähle, M. ★ Curvature measures and random sets. I. 85e:53092

## 58C40 Spectral theory; eigenvalue problems [See also 58E07.]

- Collatz, Lothar Zur Dimension der Äste von Verzweigungsdiagrammen. [On the dimension of branches of bifurcation diagrams] 85m:58042
- Dancer, E. Norman Nonuniqueness for nonlinear boundary-value problems. 85h:58031
- secondary classifications (58C40)
- Bais, F. Alexander (with Nicolai, Hermann; van Nieuwenhuizen, P.) Geometry of coet spaces and massless modes of the squashed seven-sphere in supergravity. 85e:83064
- Bressi, F. Numerical realizations of critical points. 85h:58039
- Dancer, E. Norman Breaking of symmetries for forced equations. 85g:58026
- Furi, Massimo (with Pera, M. Patrizia; Vignoli, Alfonso) Components of positive solutions for nonlinear equations with several parameters. (Italian summary) 85e:47072
- Kardashov, V. R. Structure of the spectrum and estimates for eigenvalues of nonlinear homogeneous operators. (Russian) 85a:47070
- Nicolai, Hermann See Bais, F. Alexander; et al., 85e:83064
- van Nieuwenhuizen, P. See Bais, F. Alexander; et al., 85e:83064
- Pera, M. Patrizia See Furi, Massimo; et al., 85a:47072
- Vignoli, Alfonso See Furi, Massimo; et al., 85a:47072

## 58C50 Analysis on supermanifolds or graded manifolds

- Cornwell, J. F. See Williams, David, 85m:58043
- Prokhorov, L. V. Integrals over the Grassmann algebra. Algebra with  $n$  generators. (Russian. English summary) 85d:58016
- Williams, David (with Cornwell, J. F.) The Haar integral for Lie supergroups. 85m:58043
- secondary classifications (58C50)
- Choquet-Bruhat, Yvonne Supergravité classique. Le problème de Cauchy. (English summary) [Classical supergravity. The Cauchy problem] 85d:83078
- Leites, D. A. Clifford algebras as superalgebras, and quantization. (Russian. English summary) 85k:81083
- Rempel, S. (with Schmitt, T.) Pseudodifferential operators and the index theorem on supermanifolds. 85c:58099
- Robinson, Ivor (with Trautman, Andrzej) Conformal geometry of flows in  $n$  dimensions. 85b:58104
- Schmitt, T. See Rempel, S., 85c:58099
- Trautman, Andrzej See Robinson, Ivor, 85b:58104
- Trostel, Robert Generalized Grassmannian analysis, vector-valued differential forms on Banach spaces, and generalized variational selfadjointness. 85h:58064
- Vladimirov, V. S. (with Volovich, I. V.) Superanalysis. Differential calculus. (Russian) 85b:58011
- (with Volovich, I. V.) Superanalysis. I. Differential calculus. (Russian. English summary) 85j:58023
- Volovich, I. V. Supersymmetric Yang-Mills theories and twistors. 85f:81074
- Super-self-duality for supersymmetric Yang-Mills theory. 85g:81214
- See also Vladimirov, V. S., 85b:58011 and 85j:58023

## 58C99 None of the above, but in this section

- Alexander, J. C. (with Li, Tien Yien; Yorke, James A.) Piecewise smooth homotopies. 85m:58044
- Li, Tien Yien See Alexander, J. C.; et al., 85m:58044
- Moreau, J.-J. Cinématique de variétés  $C^1$  et transport de mesures scalaires. [Kinematics of  $C^1$  manifolds and transport of scalar measures] 85b:58027
- Yorke, James A. See Alexander, J. C.; et al., 85m:58044
- secondary classifications (58C99)
- Høica, L. Approximate solution of vector equations. 85d:65071
- Nikolenko, P. V. Stability of a system of partial indices of a family of matrix-functions on a sphere. (Russian. English and Georgian summaries) 85b:45007



# 58Dxx Spaces and manifolds of mappings (including nonlinear versions of 46Exx)

## 58D05 Groups of diffeomorphisms and homeomorphisms as manifolds [See also 22E65, 57Q05.]

- Banyaga, Augustin Sur la géométrie de l'homomorphisme flux. (English summary) [On the geometry of the flux homomorphism] 85c:58025
- Fischer, Arthur E. (with Tromba, Anthony J.) On a purely "Riemannian" proof of the structure and dimension of the unramified moduli space of a compact Riemann surface. 85m:58045
- Geldin, Gerald A. Diffeomorphism groups, semidirect products, and quantum theory. 85m:58046
- Mascardé, F. Some results on  $\text{Diff}^1(\mathbb{R}^n)$ . 85j:58034
- McDuff, Dusa Local homology of groups of volume preserving diffeomorphisms. I. 85i:58038
- Symplectic diffeomorphisms and the flux homomorphism. 85m:58047
- Smolentsev, N. K. A group of diffeomorphisms that leaves a vector field fixed. (Russian) 85e:58028
- Tromba, Anthony J. See Fischer, Arthur E., 85m:58045

### secondary classifications (58D05)

- Catenacci, Roberto (with Martellini, M.) On a geometrical interpretation of the Faddeev-Popov determinant for pure quantum gravity. 85e:83026
- Furutani, Ken-ichi On the group of diffeomorphisms commuting with an elliptic operator. 85b:58130
- Geldin, Gerald A. (with Sharp, David H.) Particle spin from representations of the diffeomorphism group. 85b:81085
- (with Menikoff, R.; Sharp, David H.) Induced representations of the group of diffeomorphisms of  $\mathbb{R}^2$ . 85c:22034
- (with Menikoff, R.; Sharp, David H.) Diffeomorphism groups, gauge groups, and quantum theory. 85b:81088
- Grabowski, Janusz Groups of diffeomorphisms and Lie theory. 85b:58018
- Karube, Takashi Bundle structure of the homeomorphism groups of locally compact homogeneous spaces. 85b:57039
- Kirillov, A. A. Infinite-dimensional Lie groups: their orbits, invariants and representations. The geometry of moments. 85f:22018
- Leslie, Joshua A. On the group of real analytic diffeomorphisms of a compact real analytic manifold. 85e:58012
- Marion, Jean G-distributions et G-intégrales multiplicatives sur une variété. [Multiplicative G-distributions and G-integrals on a manifold] 85i:22035
- Generalised energy representations for current groups. 85j:22036
- Martellini, M. See Catenacci, Roberto, 85e:83026
- Menikoff, R. See Geldin, Gerald A.; et al., 85b:81088 and 85i:22034
- Putz, Mircea The Godbillon-Vey invariant of  $L^p$ -structures. 85b:57030
- Sharp, David H. See Geldin, Gerald A.; et al., 85b:81088; Geldin, Gerald A.; et al., 85i:22034 and 85i:81085
- Shnef, G. S. Geometric properties of transformation groups of Euclidean space. (Russian) 85j:57049
- Stowe, Dennis Real analytic actions of  $SL(2, \mathbb{R})$  on a surface. 85j:58090
- Wong, Raymond Y. On homeomorphism spaces of Hilbert manifolds. 85d:57014
- Xia, Dao Xing On the representations of the local current algebra and the group of diffeomorphisms. II. (Chinese summary) 85e:22028
- Zhang, Yin Nan Smooth point measures and diffeomorphism groups. 85j:58036

## 58D10 Spaces of imbeddings and immersions

### secondary classifications (58D10)

- Bruce, J. W. (with Hurley, D. J.) Focal sets in certain Riemannian manifolds. 85k:53040
- Hurley, D. J. See Bruce, J. W., 85k:53040
- Marsden, Jerrold E. Stress and Riemannian metrics in nonlinear elasticity. 85m:73018

## 58D15 Manifolds of mappings [See also 54C35.]

- Fomin, V. E. Pulverizations on Banach manifolds and some of their properties. (Russian) 85g:58023
- Michor, P. Manifolds of smooth maps. IV. Theorem of de Rham. 85d:58017

### secondary classifications (58D15)

- Atiyah, M. F. (with Pressley, A. N.) Convexity and loop groups. 85e:22026
- Bis, E. Einstein's evolution equation for the vacuum formulated on a space of differentials of immersions. 85j:58038
- Guest, M. A. Topology of the space of absolute minima of the energy functional. 85b:58047
- Møller, Jørgen Michael On spaces of maps between complex projective spaces. 85f:58004
- Mostow, Mark Alan (with Shnider, Steven) Does a generic connection depend continuously on its curvature? 85f:53036
- Pressley, A. N. See Atiyah, M. F., 85e:22026
- Shnider, Steven See Mostow, Mark Alan, 85f:53036
- Udrişte, Constantin A finite-dimensional approximation to  $\Omega^2$ . 85b:58032

## 58D17 Manifolds of metrics (esp. Riemannian)

- Blair, D. E. On the set of metrics associated to a symplectic or contact form. 85e:58029
- Fischer, Arthur E. Unfolding the singularities in superspace. 85c:58026
- Kiyohara, Kazuyoshi On deformations of the  $C_1$ -metrics on spheres. (See 85g:53002)
- Klok, Pops Generic singularities of the exponential map on Riemannian manifolds. 85f:58018
- Koloso, N. Einstein metrics and complex structures. 85d:58018
- Verges, S. N. Some properties of orbit space in Yang-Mills theory. 85j:58035

### secondary classifications (58D17)

- Arms, Judith M. (with Marsden, Jerrold E.; Moncrief, Vincent) The structure of the space of solutions of Einstein's equations. II. Several Killing fields and the Einstein-Yang-Mills equations. 85b:58033
- DeTurck, Dennis M. Deforming metrics in the direction of their Ricci tensors. 85j:53050
- Marsden, Jerrold E. See Arms, Judith M.; et al., 85b:58033
- Moncrief, Vincent See Arms, Judith M.; et al., 85b:58033
- Teukamato, Chikaki Infinitesimal Zoll deformations on spheres. 85j:53048

## 58D20 Measures (Gaussian, cylindrical, etc.) on manifolds of maps [See 28Cxx.]

- Ts'ai, Ts'ung Ming Itô's integration of Gross operator valued processes. 85e:58030
- Zhang, Yin Nan Smooth point measures and diffeomorphism groups. 85j:58036

### secondary classifications (58D20)

- Carverhill, A. P. (with Elworthy, K. D.) Flows of stochastic dynamical systems: the functional analytic approach. 85a:58101
- Daletskii, Yu. L. Stochastic differential geometry. (Russian) 85a:58102
- Elworthy, K. D. See Carverhill, A. P., 85a:58101
- Gandolfi, A. (with Germani, A.) On the definition of a topology in Hilbert spaces with applications to the white noise theory. 85e:93045
- Germani, A. See Gandolfi, A., 85e:93045
- Mallavin, Paul Diffusion on the loops. 85b:58087

## 58D25 Equations in function spaces; evolution equations [See also 34Gxx, 35K22, 35R15.]

- Asorey, M. Euclidean Yang-Mills flows in the orbit space. 85i:58029
- Baranov, Yu. S. (with Gliklikh, Yu. E.) Regularity of flows of an ideal incompressible fluid on manifolds with a boundary. (Russian) 85f:58019
- Gliklikh, Yu. E. See Baranov, Yu. S., 85f:58019
- Marsden, Jerrold E. The initial value problem and the dynamics of gravitational fields. (See 85c:83001)
- Motreanu, Dumitru (with Pavel, Nicolae H.) Flot-invariance par rapport aux équations différentielles du second ordre sur une variété. (English summary) [Flow-invariance with respect to second-order differential equations on manifolds] 85f:58020
- Pavel, Nicolae H. See Motreanu, Dumitru, 85f:58020
- Wünsch, Volkmar Le problème de Cauchy pour des équations de champs à spin quelconque. (English summary) [Cauchy problem for field equations with arbitrary spin] 85b:58032
- Yasue, Kunio A variational principle for the Navier-Stokes equation. 85j:58037

### secondary classifications (58D25)

- Abarbanel, Henry D. I. (with Holm, Darryl D.; Marsden, Jerrold E.; Raftiu, Tudor) Richardson number criterion for the nonlinear stability of three-dimensional stratified flow. 85e:76028
- Carfora, Mauro Lichnerowicz-York equation and conformal deformations on maximal slicings in asymptotically flat space-times. 85c:83008
- Carverhill, A. P. (with Elworthy, K. D.) Flows of stochastic dynamical systems: the functional analytic approach. 85a:58101
- Choquet-Bruhat, Yvonne (with Ruggeri, Tommaso) Hyperbolicity of the 3 + 1 system of Einstein equations. 85d:83006
- Supergavity classique. Le problème de Cauchy. (English summary) [Classical supergravity. The Cauchy problem] 85d:83078
- (with Paneitz, Stephen M.; Segal, I. E.) The Yang-Mills equations on the universal cosmo. 85i:58111
- The Cauchy problem in classical supergravity. 85d:83079
- Classical supergravity with Weyl spinors. 85e:83066
- Dubois-Violette, Michel Einstein equations, Yang-Mills equations and classical field theory as compatibility conditions of linear partial differential operators. 85b:81157
- Elworthy, K. D. See Carverhill, A. P., 85a:58101
- Friedrich, Helmut Cauchy problems for the conformal vacuum field equations in general relativity. 85g:83005
- Holm, Darryl D. See Abarbanel, Henry D. I.; et al., 85e:76028
- Ishenberg, James (with Moncrief, Vincent) The existence of constant mean curvature foliations of Gowdy 3-torus spacetimes. 85b:83005
- Kulkarni, Anil D. (with Shepley, L. C.; York, James W., Jr.) Initial data for  $N$  black holes. 85b:83059
- Marsden, Jerrold E. (with Weinstein, Alan D.) Coadjoint orbits, vortices, and Clebsch variables for incompressible fluids. 85g:58039
- See also Abarbanel, Henry D. I.; et al., 85e:76028
- Matsner, R. A. (with Tipler, Frank J.) Metaphysics of colliding self-gravitating plane waves. 85m:83031
- Moncrief, Vincent See Ishenberg, James, 85b:83005
- Nester, James M. The gravitational Hamiltonian. (See 85g:83002)
- O, Yong Kuk On the solvability of vector fields and boundary value problems of Navier-Stokes equations. (Korean. English summary) 85b:35174
- Paneitz, Stephen M. See Choquet-Bruhat, Yvonne; et al., 85i:58111
- Popov, V. I. (with Savchenko, V. S.) Functional integration in optimal control theory. (Russian) 85g:49034
- Raftiu, Tudor See Abarbanel, Henry D. I.; et al., 85e:76028
- Ruggeri, Tommaso See Choquet-Bruhat, Yvonne, 85d:83006
- Savchenko, V. S. See Popov, V. I., 85g:49034
- Segal, I. E. See Choquet-Bruhat, Yvonne; et al., 85i:58111
- Shepley, L. C. See Kulkarni, Anil D.; et al., 85b:83059
- Śniatycki, Jędrzej The Cauchy data space formulation of classical field theory. 85i:58037
- Solopenko, V. M. A nonstationary flow problem for the Navier-Stokes equations and generalized Prandtl equations. (Russian. English summary) 85g:76013

- Teyssandier, P. (with Tourrenc, Ph.) The Cauchy problem for the  $R + R^2$  theories of gravity without torsion. 85c:83075
- Tipler, Frank J. See Matsner, R. A., 85m:83031
- Tourrenc, Ph. See Teyssandier, P., 85c:83075
- Watanabe, Shinzo Stochastic flows of diffeomorphisms. 85h:60090
- Weinstein, Alan D. See Marsden, Jerrold E., 85g:58039
- York, James W., Jr. Initial data for  $N$  black holes. (See 85f:00012)
- See also Kulkarni, Anil D.; et al., 85b:83059

### 58D30 Applications (in quantum mechanics (Feynman path integrals), relativity, fluid dynamics, etc.)

- Albeverio, S. (with Blanchard, Ph.; Hoegh-Krohn, R.) Feynman path integrals, the Poisson formula and the theta function for the Schrödinger operators. 85c:58027
- Albinus, Günter Mathematische Aspekte der Funktionalintegration. [Mathematical aspects of functional integration] 85i:58030
- Arns, Judith M. (with Marsden, Jerrold E.; Moncrief, Vincent) The structure of the space of solutions of Einstein's equations. II. Several Killing fields and the Einstein-Yang-Mills equations. 85h:58033
- Bins, E. Einstein's evolution equation for the vacuum formulated on a space of differentials of immersions. 85j:58038
- Blanchard, Ph. See Albeverio, S.; et al., 85c:58027
- Hoegh-Krohn, R. See Albeverio, S.; et al., 85c:58027
- Ishenber, James (with Marsden, Jerrold E.) A slice theorem for the space of solutions of Einstein's equations. 85k:58016
- Marsden, Jerrold E. See Arns, Judith M.; et al., 85h:58033 and Ishenber, James, 85k:58016
- Moncrief, Vincent See Arns, Judith M.; et al., 85h:58033

#### secondary classifications (58D30)

- Babin, A. V. (with Vishik, M. I.) Upper and lower bounds of the dimension of attractors of evolution partial differential equations. (Russian) 85j:35088
- Cameron, R. H. (with Storvick, D. A.) A new translation theorem for the analytic Feynman integral. 85d:28010
- Carfora, Mauro Lichnerowicz-York equation and conformal deformations on maximal slicings in asymptotically flat space-times. 85c:83008
- Choquet-Brubhat, Yvonne Supergravité classique. Le problème de Cauchy. (English summary) [Classical supergravity. The Cauchy problem] 85d:83078
- Clarke, C. J. S. Fields, fibre bundles and gauge groups. (See 85i:58002)
- Daubechies, I. (with Klauder, John R.) Constructing measures for path integrals. 85e:81045
- (with Klauder, John R.) Measures for more quadratic path integrals. 85d:81044
- See also Klauder, John R., 85b:81068
- Davies, Ian (with Truman, Aubrey) Laplace expansions of conditional Wiener integrals and applications to quantum physics. 85j:60119
- DeWitt-Morette, Cécile (with Zhang, Tian Rong) Path integrals and conservation laws. 85i:81066a
- (with Zhang, Tian Rong) Feynman-Kac formula in phase space with application to coherent-state transitions. 85k:81066b
- (with Nelson, Bruce; Zhang, Tian Rong) Caustic problems in quantum mechanics with applications to scattering theory. 85k:81066c
- Duru, I. H. Feynman's formula for a harmonic oscillator. 85i:81044
- Finkelstein, David See Williams, Jeffrey George, 85k:81143
- Fiziev, P. P. Phase path approximations in the Feynman path integrals. (Russian summary) 85b:81067
- Some instructive examples of Mayer's interference in path integral. (Russian summary) 85b:81033
- Gaveau, Bernard (with Moulinier, Jean-Marc) Intégrales oscillantes stochastiques: estimation asymptotique de fonctionnelles caractéristiques. (English summary) [Oscillatory stochastic integrals: asymptotic estimation of characteristic functionals] 85m:60099
- Haba, Z. Behavior in strong fields of Euclidean gauge theories. II. 85e:81085
- Hartle, James B. (with Kuchaf, Karel V.) Path integrals in parametrized theories: Newtonian systems. 85i:81047
- Ichinose, Takashi (with Tamura, Hiroshi) Propagation of a Dirac particle. A path integral approach. 85k:81069
- Isham, Christopher J.  $\theta$ -states induced by the diffeomorphism group in canonically quantized gravity. (See 85g:83004)
- Johnson, Gerald W. (with Skoug, D. L.) Notes on the Feynman integral. II. 85k:81070b
- (with Skoug, D. L.) Notes on the Feynman integral. I. 85k:81070a
- The equivalence of two approaches to the Feynman integral. 85d:81047
- (with Skoug, D. L.) Notes on the Feynman integral. III. The Schroedinger equation. 85k:81070c
- Kapoor, A. K. Quantization in nonlinear coordinates via Hamiltonian path integrals. 85d:81048
- Quantization in nonlinear coordinates via Hamiltonian path integrals. II. 85k:81072
- Kazakov, D. I. Calculation of Feynman integrals by the "uniqueness" method. (Russian. English summary) 85g:81054
- Klauder, John R. Constructing measures for spin-variable path integrals. 85e:81044
- (with Daubechies, I.) Quantum mechanical path integrals with Wiener measures for all polynomial Hamiltonians. 85b:81068
- See also Daubechies, I., 85d:81044 and 85e:81045
- Korepin, V. E. (with Shatashvili, S. L.) Rational parametrization of three-instanton solutions of Yang-Mills equations. (Russian) 85m:81095
- Kuchaf, Karel V. Measure for measure: covariant skeletonizations of phase space path integrals for systems moving on Riemannian manifolds. 85g:81065
- See also Hartle, James B., 85i:81047
- Kulkarni, Anil D. Time-asymptotic initial data for  $N$  black holes. 85k:83005

- Langouche, Flor (with Roekaerts, Dirk; Tiraepgui, Enrique) ★ Functional integration and semiclassical expansions. 85e:81047
- Lapidus, Michel L. Intégrale de Feynman modifiée et formule du produit pour un potentiel singulier négatif. (English summary) [Modified Feynman integral and product formula for a negative singular potential] 85h:35085
- Lopes, C. A. Material and electromagnetic sources of the Kerr-Newman geometry. (Italian and Russian summaries) 85e:83037
- Lupieri, Giancarlo Generalized stochastic processes and continual observations in quantum mechanics. 85f:81022
- Maharana, Jnanadeva Stochastic quantization, associated supersymmetry and Nicolai map. (See 85k:81180)
- Mandrek, V. Some remarks on various definitions of Feynman integral. 85d:81060
- Marsden, Jerrold E. Stress and Riemannian metrics in nonlinear elasticity. 85m:73018
- Menossi, E. See Morandi, G., 85k:81012
- Morandi, G. (with Menossi, E.) Path-integrals in multiply-connected spaces and the Aharonov-Bohm effect. (German summary) 85k:81012
- Moulinier, Jean-Marc See Gaveau, Bernard, 85m:60099
- Narlikar, Jayant V. (with Padmanabhan, T.) The problems of singularity particle horizon and flatness in quantum cosmology. 85i:83065
- (with Padmanabhan, T.) Quantum cosmology via path integrals. 85d:83067
- Nelson, Bruce See DeWitt-Morette, Cécile; et al., 85k:81066c
- Padmanabhan, T. See Narlikar, Jayant V., 85d:83067 and 85i:83065
- Roekaerts, Dirk See Langouche, Flor; et al., 85e:81047
- Shatashvili, S. L. See Korepin, V. E., 85m:81095
- Skoug, D. L. See Johnson, Gerald W., 85k:81070a; Johnson, Gerald W., 85k:81070b and 85k:81070c
- Śniatycki, Jędrzej The Cauchy data space formulation of classical field theory. 85i:58037
- Storvick, D. A. See Cameron, R. H., 85d:28010
- Sudres, Rodolfo Feynman path integral for the Dirac equation. 85i:81048
- Tamura, Hiroshi See Ichinose, Takashi, 85k:81069
- Teitelholm, Claudio Quantum mechanical origin of the sandwich theorem in classical gravitation theory. (See 85g:83004)
- Explicit evaluation of group-invariant measure as by-product of path integration over Yang-Mills fields. 85g:81066
- Tiraepgui, Enrique See Langouche, Flor; et al., 85e:81047
- Truman, Aubrey See Davies, Ian, 85j:60119
- Vishik, M. I. See Babin, A. V., 85j:35088
- Weissman, Yitzhak On the stationary phase evaluation of path integrals in the coherent states representation. 85d:81051
- Williams, Jeffrey George (with Finkelstein, David) Group fields, gravity, and angular momentum. 85k:81143
- Wu, Yong Shi See Zumino, B.; et al., 85m:81120
- Zee, A. See Zumino, B.; et al., 85m:81120
- Zhang, Tian Rong See DeWitt-Morette, Cécile, 85k:81066a; DeWitt-Morette, Cécile, 85k:81066b and 85k:81066c
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### 58Exx Variational problems in infinite-dimensional spaces

- Fomenko, A. T. ★ Вариационные методы в топологии. (Russian) [Variational methods in topology] 85k:58017

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- Blanchard, Ph. (with Brüning, E.) ★ Direkte Methoden der Variationsrechnung. (German) [Direct methods of the calculus of variations] 85a:49001
- Brüning, E. See Blanchard, Ph., 85a:49001
- Rassias, Themistocles M. Morse theory in global variational analysis. 85a:81053
- Proceedings:
- IUTAM-ISIMM symposium on modern developments in analytical mechanics ★ Proceedings of the IUTAM-ISIMM symposium on modern developments in analytical mechanics. Vol. II. 85j:58005b
- Symposium:
- IUTAM-ISIMM, modern developments in analytical mechanics ★ Proceedings of the IUTAM-ISIMM symposium on modern developments in analytical mechanics. Vol. II. 85j:58005b
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### 58E05 Abstract critical point theory (Morse theory, Ljusternik-Schnirelman (Lyusternik-Shnirel'man) theory, etc.)

- Ambrosetti, Antonio Differential equations with multiple solutions and nonlinear functional analysis. 85f:58021
- Bartolo, P. (with Benci, V.; Fortunato, D.) Abstract critical point theorems and applications to some nonlinear problems with "strong" resonance at infinity. 85c:58028
- Belov, V. Ya. A formula of Morse in the critical case. (Russian) 85j:58039
- Benci, V. See Bartolo, P.; et al., 85c:58028
- Bondarchuk, V. S. The Morse index and oscillation of Jacobi fields. (Russian) 85d:58019
- Buchner, Michael (with Marsden, Jerrold E.; Schecter, Stephen) Examples for the infinite-dimensional Morse lemma. 85h:58034b
- Costa, David Goldstein (with Willem, Michel) Points critiques multiples de fonctionnelles invariantes. (English summary) [Multiple critical points of invariant functionals] 85f:58022
- Duneau, M. See Kats, André, 85b:58028
- Ekeland, Ivar Une théorie de Morse pour les systèmes hamiltoniens convexes. (English summary) [A Morse theory for convex Hamiltonian systems] 85f:58023
- Fortunato, D. See Bartolo, P.; et al., 85c:58028

- Golubitsky, Martin (with Marsden, Jerrold E.) The Morse lemma in infinite dimensions via singularity theory. **85b:58034a**
- Grosser, David Integrality of the monopole number in SU(2) Yang-Mills-Higgs theory on  $\mathbb{R}^3$ . **85m:58048**
- Hofer, Helmut A note on the topological degree at a critical point of mountainpass-type. **85a:58015**
- Kata, André (with Duneau, M.) Stability of symmetries for equilibrium configurations of  $n$  particles in three dimensions. **85b:58028**
- (Lin, Chang Shou) See Nirenberg, L. **85b:58035**
- Marsden, Jerrold E. See Golubitsky, Martin, **85b:58034a** and Buchner, Michael; et al., **85b:58034b**
- McKenzie, Ross H. The degree of the gradient of a coercive functional. **85i:58031**
- Min-Oo Yang-Mills fields and the isoperimetric inequality. (See **85g:53003**)
- Nirenberg, L. Comments on nonlinear problems. **85b:58035**
- Novikov, S. P. (with Talmanov, I. A.) Periodic extremals of multivalued or not everywhere positive functionals. (Russian) **85i:58032**
- Orlov, A. V. Localization of critical points of infinite-dimensional functionals. (Russian) **85c:58029**
- Schecter, Stephen See Buchner, Michael; et al., **85b:58034b**
- Sharko, V. V. See Trokhimchuk, Yu. Yu.; et al., **85d:58020**
- Struwe, M. Quasilinear elliptic eigenvalue problems. **85b:58036**
- Talmanov, I. A. See Novikov, S. P., **85i:58032**
- Taubes, C. H. Path-connected Yang-Mills moduli spaces. **85m:58049**
- Tian, Gang On the mountain pass lemma. (Chinese) (Not in MR)
- Trokhimchuk, Yu. Yu. (with Zelins'kii, Yu. B.; Sharko, V. V.) Some results in the topology of manifolds, the theory of multivalued mappings and Morse theory. (Russian) **85d:58020**
- Willem, Michel See Costa, David Goldstein, **85f:58022**
- Zelins'kii, Yu. B. See Trokhimchuk, Yu. Yu.; et al., **85d:58020**
- Zhang, Gong Qing Morse theory on Banach space and its applications to partial differential equations. **85j:58040**
- A variant mountain pass lemma. **85b:58037**
- Variational methods and sub- and supersolutions. **85b:58038**
- secondary classifications (58E05)
- Arnold, V. I. Singularities in the calculus of variations. (Russian) **85m:58031**
- Atiyah, M. F. (with Bott, Raoul) The Yang-Mills equations over Riemann surfaces. **85a:14006**
- Bates, P. W. A variational approach to solving semilinear equations at resonance. **85a:49031**
- Bereytski, Henri Solutions périodiques de systèmes hamiltoniens. [Periodic solutions of Hamiltonian systems] **85a:34058**
- Bott, Raoul See Atiyah, M. F., **85a:14006**
- Conley, C. (with Zehnder, E.) An index theory for periodic solutions of a Hamiltonian system. **85f:58006**
- Dai, Shu Huan (with Yan, Zi Qian) Existence of nontrivial solutions of the equation  $\Delta^2 u - a\Delta u + bu = f(x, u)$ —an application of the mountain pass lemma. (Chinese. English summary) **85k:35086**
- Ekeland, Ivar (with Lasry, J.-M.) Duality in nonconvex variational problems. (French summary) **85a:49011**
- Dual variational methods in nonconvex optimization and differential equations. **85b:49018**
- Une théorie de Morse pour les systèmes hamiltoniens. (English summary) [A Morse theory for Hamiltonian systems] **85c:58036**
- de Figueiredo, Djairo G. (with Solimini, Sergio) A variational approach to superlinear elliptic problems. **85i:35057**
- On the superlinear Ambrosetti-Prodi problem. **85m:35024**
- Ikawa, Toshihiko Morse functions and submanifolds of hyperbolic space. **85m:53063**
- Kapitanov, L. V. (with Ladyzhenskaya, O. A.) The Coleman principle for finding stationary points of invariant functionals. (Russian. English summary) **85b:49082**
- Ladyzhenskaya, O. A. See Kapitanov, L. V., **85b:49082**
- Lasry, J.-M. See Ekeland, Ivar, **85a:49011**
- Manton, N. S. Topology in the Weinberg-Salam theory. **85i:81127**
- Novikov, S. P. Hamiltonian formalism and variational-topological methods for finding periodic trajectories of conservative dynamical systems. **85d:58032**
- Pacella, Filomena (with Tricarico, Mariarosaria) On the existence of infinitely many critical points of the functional  $\int_{\Omega} f(x, u, Du) dx$ . (Italian summary) **85g:49013**
- Solimini, Sergio Multiplicity results for a nonlinear Dirichlet problem. **85i:35061**
- See also Figueiredo, Djairo G., **85i:35057**
- Taubes, C. H. Morse theory and monopoles: topology in long range forces. (See **85m:81003**)
- Tricarico, Mariarosaria See Pacella, Filomena, **85g:49013**
- Ward, J. R., Jr. Applications of critical point theory to weakly nonlinear boundary value problems at resonance. **85i:35084**
- Yan, Zi Qian See Dai, Shu Huan, **85k:35086**
- Zehnder, E. See Conley, C., **85f:58006**
- 58E07 Abstract bifurcation theory
- Afendikov, A. L. Branching in the presence of a group of symmetries and bifurcation of Taylor vortices. (Russian) **85f:58024**
- Antanovskii, L. K. Branching of solutions of a problem with a free boundary for equations of thermocapillary convection. (Russian) **85c:58031**
- Bauschke, F. See Skripnik, I. V., **85m:58053**
- Bressi, F. Approximation of bifurcation points. (Russian) **85m:58050**
- Numerical realizations of critical points. **85b:58039**
- Brown, K. J. (with Shivaji, R.) Simple proofs of some results in perturbed bifurcation theory. **85a:58016**
- Brown, Robert Arthur See Ungar, L. H., **85a:58017**
- Busano, Ernesto (with Golubitsky, Martin) Bifurcation involving the hexagonal lattice. **85b:58029**
- (with Geymonat, G.) Geometrical methods in some bifurcation problems of elasticity. **85b:58040**
- Cantrell, Robert Stephen Multiparameter bifurcation problems and topological degree. **85g:58024**
- Chillingworth, D. R. J. (with Marsden, Jerrold E.; Wan, Yieh Hei) Symmetry and bifurcation in three-dimensional elasticity. II. **85g:58025a**
- Dancer, E. Norman Bifurcation under continuous groups of symmetries. **85f:58025**
- Breaking of symmetries for forced equations. **85g:58026**
- Perturbation of zeros in the presence of symmetries. **85g:58027**
- Degenerate critical points, homotopy indices and Morse inequalities. **85i:58033**
- Dangelmayr, G. Singularities of dispersion relations. **85c:58032**
- Erneux, Thomas (with Reiss, Edward L.) Singular secondary bifurcation. **85j:58041**
- Geymonat, G. See Busano, Ernesto, **85b:58040**
- Golubitsky, Martin See Busano, Ernesto, **85b:58029**
- Hale, Jack Introduction to dynamic bifurcation. **85k:58018**
- Huseyin, K. On degenerate bifurcations concerning nonconservative systems. (Not in MR)
- Jepson, A. See Spence, A., **85g:58028**
- Krasnosel'skii, A. M. (with Yumagulov, M. G.) Bifurcation values of parameters in the problem of forced oscillations of automatic control systems. (Russian. Tajiki summary) **85j:58042**
- Machinek, A. K. (with Troger, H.) Über beschränkt-generische Verzweigungen. [On restricted generic bifurcations] **85k:58019**
- Marsden, Jerrold E. See Chillingworth, D. R. J.; et al., **85g:58025a** and Wan, Yieh Hei, **85g:58025b**
- Peitgen, H.-O. A mechanism for spurious solutions of nonlinear boundary value problems. (See **85b:58003**)
- (with Tromba, Anthony J.) Unfolding bifurcations of an elliptic boundary value problem. **85i:58034**
- Rabier, Patrick Une méthode directe dans l'étude des bifurcations perturbées par un nombre quelconque de paramètres. (English summary) [A direct method in the study of bifurcations perturbed by any number of parameters] **85m:58051**
- A generalization of the implicit function theorem for mappings from  $\mathbb{R}^{n+1}$  into  $\mathbb{R}^n$  and its applications. **85k:58020**
- Reeken, Michael The rotating string. **85m:58052**
- Reiss, Edward L. See Erneux, Thomas, **85j:58041**
- Sapronov, Yu. I. See Zavarovskii, Yu. N., **(85k:35001)**
- Sattlinger, D. H. Bifurcation from spherical symmetry. **85b:58030**
- Schaeff, Renate Global behaviour of solution branches for some Neumann problems depending on one or several parameters. **85i:58035**
- Shivaji, R. See Brown, K. J., **85a:58016**
- Skripnik, I. V. (with Bauschke, F.) Asymptotic points of bifurcation of variational problems. (Russian. English summary) **85m:58053**
- Spence, A. (with Jepson, A.) The numerical computation of turning points of nonlinear equations. **85g:58028**
- Troger, H. See Machinek, A. K., **85k:58019**
- Tromba, Anthony J. See Peitgen, H.-O., **85i:58034**
- Ungar, L. H. (with Brown, Robert Arthur) The dependence of the shape and stability of captive rotating drops on multiple parameters. **85a:58017**
- Vanderbauwhede, A. ★ Local bifurcation and symmetry. **85f:58026**
- Wan, Yieh Hei (with Marsden, Jerrold E.) Symmetry and bifurcation in three-dimensional elasticity. III. Stressed reference configurations. **85g:58025b**
- See also Chillingworth, D. R. J.; et al., **85g:58025a**
- Yumagulov, M. G. See Krasnosel'skii, A. M., **85j:58042**
- Zavarovskii, Yu. N. (with Sapronov, Yu. I.) Bifurcation of solutions of Kirchhoff's equation for an asymmetric rod. (Russian) (See **85k:35001**)
- secondary classifications (58E07)
- Ackermann, S. Axiomatische Bifurkationstheorie. (English and Russian summaries) [Axiomatic bifurcation theory] **85a:47071**
- Alexander, J. C. (with Antman, Stuart S.; Deng, Shi Tao) Nonlinear eigenvalue problems for the whirling of heavy elastic strings. II. New methods of global bifurcation theory. **85c:73036**
- Antman, Stuart S. Large lateral buckling of nonlinearly elastic beams. **85h:73024**
- See also Alexander, J. C.; et al., **85c:73036**
- Bauschke, F. Theorems on the existence of asymptotic points of bifurcation for the equation  $Au + \lambda Tu = 0$  in a Banach space. (Russian) **85f:47064**
- Bowman, Thomas T. Volterra series and the alternative method of Cesari. **85i:93018**
- Brindley, John See Moros, Irene M., **85c:76028**
- Bruhns, O. T. Bifurcation problems in plasticity. (See **85j:73001**)
- Buckmaster, J. Polyhedral flames—an exercise in bimodal bifurcation analysis. **85k:80010**
- Cartiau, Dan Cooperational phenomena in dissipative systems far from thermodynamic equilibrium. Bifurcation of reaction-diffusion systems. (Romanian. English summary) **85b:80024**
- Chossat, P. (with Giraud, J. P.) Calcul des coefficients de bifurcation dans un problème de convection en symétrie sphérique. (English summary) [Computation of the coefficients of bifurcation for the onset of convection in a spherical shell] **85i:76028**
- Chow, Shui Nee See Oh, C. H.; et al., **85j:81053**
- Cicogna, G. Bifurcation from topology and symmetry arguments. (Italian summary) **85c:47087**
- Cliffe, K. A. (with Winters, K. H.) A numerical study of the cusp catastrophe for Bénard convection in tilted cavities. **85f:76066**
- Collatz, Lothar Zur Dimension der Äste von Verzweigungsdiagrammen. [On the dimension of branches of bifurcation diagrams] **85m:58042**
- Conley, C. (with Smoller, Joel A.) Algebraic and topological invariants for reaction-diffusion equations. **85i:35082**



- Courbage, M. (with Prigogine, I.) Intrinsic randomness and intrinsic irreversibility in classical dynamical systems. **85b:82023**
- Craig, Walter A. Bifurcation theory for periodic solutions of nonlinear dissipative hyperbolic equations. **85e:35018**
- Deng, Shi Tao. See Alexander, J. C.; et al., **85c:73036**
- Edmunds, D. E. (with Webb, J. R. L.) Remarks on nonlinear spectral theory. (Italian summary) **85a:47069**
- Fink, J. P. (with Rheinboldt, Werner C.) On the error behavior of the reduced basis technique for nonlinear finite element approximations. (German and Russian summaries) **85e:73047**
- Furi, Massimo (with Pera, M. Patrizia) Cobifurcating branches of solutions for nonlinear eigenvalue problems in Banach spaces. (Italian summary) **85h:47077**
- Gaeta, Giuseppe (with Rossi, Pietro) Gradient property of bifurcation equation for systems with rotational symmetry. **85m:58160**
- Giraud, J. P. See Chossat, P., **85i:76028**
- Golubitsky, Martin The Bénard problem, symmetry and the lattice of isotropy subgroups. **85k:58059**
- (with Schaeffer, David G.) A discussion of symmetry and symmetry breaking. **85b:58018**
- Gupta, J. R. On the stability of generalized hydromagnetic convection. II. **85c:76040a**
- On the stability of generalized hydromagnetic convection. III. Determination of amplitude past marginal state. **85c:76040b**
- Hess, Peter On bifurcation from infinity for positive solutions of second order elliptic eigenvalue problems. **85c:35006**
- Ivanova, A. N. (with Maganova, N. E.) The nonlocal character of the behavior of dissipative structures. (Russian) **85h:80013**
- Keyfitz, Barbara Lee (with Kuiper, Hendrik J.) Bifurcation resulting from changes in domain in a reaction-diffusion equation. **85e:35020**
- Kielhöfer, Hansjörg (with Lauterbach, Reiner) On the principle of reduced stability. **85c:34070**
- Kolkka, Robert W. Singular perturbations of bifurcations with multiple independent bifurcation parameters. **85h:73029**
- Kuiper, Hendrik J. See Keyfitz, Barbara Lee, **85c:35020**
- Labisch, F. K. The shallow arch problem for nonsymmetric vertical loads. (Not in MR)
- Lai, C. H. See Oh, C. H.; et al., **85j:81053**
- Lauterbach, Reiner See Kielhöfer, Hansjörg, **85c:34070**
- Maganova, N. E. See Ivanova, A. N., **85h:80013**
- Malek Mansour, M. (with Van den Broeck, C.) Inhomogeneous fluctuations in reaction-diffusion systems. **85k:80017**
- Mees, A. I. A plain man's guide to bifurcations. **85a:58075**
- Mignot, Fulbert (with Puel, Jean-Pierre) Flambage d'une tige viscoélastique. (English summary) [Buckling of a viscoelastic rod] **85b:73015**
- Moros, Irene M. (with Brindley, John) Nonlinear amplitude evolution of baroclinic wave trains and wave packets. **85c:76028**
- de Mottoni, P. (with Schiaffino, A.) Bifurcation of stable periodic solutions for periodic quasilinear parabolic equations. **85c:35005**
- Nguyen Quoc Son Bifurcation et stabilité des systèmes irréversibles obéissant au principe de dissipation maximale. (English summary) [Bifurcation and stability of irreversible systems obeying the maximum dissipation principle] **85k:73048**
- Nicolis, G. Bifurcations, fluctuations and dissipative structures. **85k:92007**
- Oh, C. H. (with Chow, Shui Nee; Lai, C. H.) Bifurcation of the Coulomb solution of the Yang-Mills equations with sources. **85j:81053**
- Okamoto, Hisashi Bifurcation phenomena in a free boundary problem for a circulating flow with surface tension. **85i:35145**
- Palmore, Julian I. Bifurcation of stationary vortex configurations. **85d:76011**
- Parry, Gareth P. First kind transitions in ideal crystals. **85i:82031**
- Peitgen, H.-O. (with Schmitt, K.) Global analysis of two-parameter elliptic eigenvalue problems. **85f:35017**
- Pera, M. Patrizia See Furi, Massimo, **85h:47077**
- (Petrova, Irina) See Ackermann, S., **85a:47071**
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- Puel, Jean-Pierre See Mignot, Fulbert, **85b:73015**
- Ramaswamy, Mythili Comportement global des solutions d'une équation non linéaire. (English summary) [On the global set of solutions of a nonlinear ODE] **85f:34013**
- Rheinboldt, Werner C. See Fink, J. P., **85c:73047**
- Rossi, Pietro See Gaeta, Giuseppe, **85m:58160**
- Sadovský, Z. Initial deflection shape factor in perturbed plate buckling. **85c:73035**
- Sapronov, Yu. I. See Zacheva, V. R., **85c:58015**
- Schaeffer, David G. See Golubitsky, Martin, **85b:58018**
- Schiaffino, A. See de Mottoni, P., **85c:35005**
- Schmitt, K. See Peitgen, H.-O., **85f:35017**
- Simpson, Henry C. (with Spector, Scott J.) On barrelling instabilities in finite elasticity. **85m:73028**
- Singkofer, Karen Solvability of nonlinear odd-ordered differential equations using K-monotonicity. **85d:47056**
- Smoller, Joel A. See Conley, C., **85i:35082**
- Solimini, Sergio Differential problems with symmetries: equations with jumping nonlinearities. **85k:35049**
- Spector, Scott J. See Simpson, Henry C., **85m:73028**
- Stewart, Ian Nonelementary catastrophe theory. **85i:58025**
- Swift, James W. Convection in a rotating fluid layer. **85j:76017**
- Toland, J. F. Positive solutions of nonlinear elliptic equations—existence and nonexistence of solutions with radial symmetry in  $L_p(\mathbb{R}^N)$ . **85b:35015**
- Van den Broeck, C. See Malek Mansour, M., **85k:80017**
- Vegas, J. M. A Neumann elliptic problem with variable domain. **85a:35039**
- Wan, Yieh Hei On the nonlinear stability of circular vortex patches. (See **85g:58006**)
- Webb, J. R. L. See Edmunds, D. E., **85a:47069**
- Winters, K. H. See Cliffe, K. A., **85f:76066**
- Zacheva, V. R. Continuation with respect to a parameter of simple solutions. (Russian) **85a:28022**
- (with Sapronov, Yu. I.) Local analysis of nonlinear Fredholm equations. (Russian) **85c:58015**
- Zhao, Yi Chun Surjectivity of perturbed maximal monotone mappings. (Chinese) (Not in MR)

## 58E10 Applications to the theory of geodesics (problems in one independent variable)

- Ballmann, W. (with Thorbergsson, Gudlaugur; Ziller, Wolfgang) Some existence theorems for closed geodesics. **85h:58041**
- Bangert, Victor (with Klingenberg, Wilhelm) Homology generated by iterated closed geodesics. **85b:58031**
- (Gelbaum, Bernard R.) See Postnikov, M. M., **85a:58018**
- Hingston, N. Equivariant Morse theory and closed geodesics. **85i:58036**
- Klingenberg, Wilhelm ★ Closed geodesics on Riemannian manifolds. **85g:58029**
- (with Shikata, Yoshihiro) An existence theorem for an infinite set of closed geodesics. (Russian) **85e:58033**
- See also Bangert, Victor, **85b:58031**
- Postnikov, M. M. ★ The variational theory of geodesics. **85a:58018**
- Rademacher, Hans-Bert On the number of closed geodesics on projective spaces. **85c:58034**
- Shikata, Yoshihiro See Klingenberg, Wilhelm, **85e:58033**
- Thorbergsson, Gudlaugur See Ballmann, W.; et al., **85h:58041**
- Toukamoto, Chiaki Integrability of infinitesimal Zoll deformations. **85m:58054**
- Udrisic, Constantin A finite-dimensional approximation to  $\Omega_2^n$ . **85b:58032**
- Vigué-Poirrier, Micheline Sur la croissance des nombres de Betti de l'espace des lacets libres sur un espace donné. (English summary) [On the growth of the Betti numbers of the space of free loops over a given space] (See **85d:58001**)
- Ziller, Wolfgang See Ballmann, W.; et al., **85h:58041**

## secondary classifications (58E10)

- Bangert, Victor Manifolds with geodesic chords of constant length. **85d:53016**
- Hayashi, Kiyoshi Periodic solution of classical Hamiltonian systems. **85i:58045**
- Hô, Tai Yun Extremal properties of geodesics in the material manifold ( $R \equiv 0$ ,  $T \neq 0$ ). I. (Korean. English summary) (Not in MR)
- Pansu, Pierre Croissance des boules et des géodésiques fermées dans les nilvariétés. (English summary) [Growth of balls and closed geodesics in nilmanifolds] **85m:53040**
- (Shiohama, Katsuhiko) See Geometry of geodesics and related topics, **85g:53002**
- Geometry of geodesics and related topics ★ Geometry of geodesics and related topics. **85g:53002**
- Tokyo ★ Geometry of geodesics and related topics. **85g:53002**

## 58E11 Critical metrics

- Blair, D. E. Critical associated metrics on contact manifolds. **85f:58027**
- Shen, Chun Li Critical and symmetric connections on 4-manifolds. (See **85g:53003**)

## secondary classifications (58E11)

- Coquereaux, R. Internal Einstein spaces and symmetry breaking. **85k:81133**
- Yau, Shing Tung A survey on Kähler-Einstein metrics. **85d:53032**
- Zardecki, Andrew Modeling in chaotic relativity. **85d:83091**

## 58E12 Applications to minimal surfaces (problems in two independent variables)

- Barbosa, J. L. (with do Carmo, Manfredo P.) Stability of hypersurfaces with constant mean curvature. **85k:58021c**
- Beeson, Michael J. (with Tromba, Anthony J.) The cusp catastrophe of Thom in the bifurcation of minimal surfaces. **85h:58042**
- do Carmo, Manfredo P. See Barbosa, J. L., **85k:58021c**
- Fomenko, A. T. The rate of growth and least volumes of globally minimal surfaces in cobordisms. (Russian) **85h:58043**
- Heinz, Erhard Minimalflächen mit polygonalem Rand. [Minimal surfaces with polygonal boundary] **85f:58028**
- Koiso, Miyuki On the space of minimal surfaces with boundaries. **85h:58044**
- On the stability of minimal surfaces in  $\mathbb{R}^3$ . **85m:58055**
- Mori, Hiroshi On surfaces of right helicoid type in  $H^3$ . **85k:58021a**
- Stable complete constant mean curvature surfaces in  $\mathbb{R}^3$  and  $H^3$ . **85k:58021b**
- Nitsche, Johannes C. C. Uniqueness and nonuniqueness for Plateau's problem—one of the last major questions. **85d:58021**
- Söllner, Michael Plateau's problem for surfaces of constant mean curvature from a global point of view. **85d:58022**
- Struwe, M. On a free boundary problem for minimal surfaces. **85a:58019**
- Tromba, Anthony J. See Beeson, Michael J., **85h:58042**
- Yau, Shing Tung Minimal surfaces and their role in differential geometry. (See **85g:53003**)

## secondary classifications (58E12)

- Barbosa, J. L. (with do Carmo, Manfredo P.) Hopf's conjecture for stable immersed surfaces. **85c:53009**
- Bréas, H. (with Coron, J.-M.) Multiple solutions of  $H$ -systems and Rellich's conjecture. **85i:35010**
- Brown, Martin Richard (with Ottewill, Adrian C.) Green's functions, states and renormalisation. (See **85g:83004**)
- do Carmo, Manfredo P. See Barbosa, J. L., **85c:53009**

- Coron, J.-M. *See Bréals, H.*, 85i:53010
- Hann, Joel Complete area minimizing minimal surfaces which are not totally geodesic. 85i:53011
- Ottewill, Adrian C. *See Brown, Martin Richard*, (85g:83004)
- Rassias, Themistocles M. On certain properties of eigenvalues and the Poincaré inequality. 85c:33013
- Schoen, Richard Uniqueness, symmetry, and embeddedness of minimal surfaces. 85f:53011
- Sergin, G. A. Variational problems and evolution variational inequalities in non-convex spaces with applications to problems of geometry and plasticity. (Russian) 85i:49007
- Simon, L. M. On isolated singularities of minimal surfaces. 85i:49071

#### 58E15 Application to extremal problems in several variables

- Bakelman, I. J. Variational problems and elliptic Monge-Ampère equations. 85b:58045
- Bondarchuk, V. S. The Morse index and deformations of Hamiltonian systems. (Russian) 85b:58023
- Crampin, M. (with Prince, G. E.; Thompson, Gerard) A geometrical version of the Helmholtz conditions in time-dependent Lagrangian dynamics. 85b:58048
- Frid, H. (with Thayer, F. Javier) The Morse index theorem for elliptic problems with a constraint. 85c:58030
- Hitchin, N. J. The Yang-Mills equations and the topology of 4-manifolds (after Simon K. Donaldson). 85a:58020
- Mangiarotti, L. (with Modugno, M.) Some results on the calculus of variations on jet spaces. (French summary) 85c:58031
- Modugno, M. *See Mangiarotti, L.*, 85c:58031
- Prince, G. E. *See Crampin, M.*, et al., 85b:58048
- Śniatycki, Jędrzej The Cauchy data space formulation of classical field theory. 85i:58037
- Thayer, F. Javier *See Frid, H.*, 85c:58030
- Thompson, Gerard *See Crampin, M.*, et al., 85b:58048
- Tyrlis, A. V. The property of absence of local minima in the multidimensional Dirichlet functional. (Russian) 85c:58035

#### secondary classifications (58E15)

- Allard, William K. On the first and second variation of a parametric integral. 85g:49044  
An a priori estimate for the oscillation of the normal to a hypersurface whose first and second variation with respect to an elliptic integrand is controlled. 85g:49043
- Ball, J. M. (with Maraden, Jerrold E.) Quasiconvexity at the boundary, positivity of the second variation and elastic stability. 85m:49041
- Boyarski, Bogdan (with Iwaniec, T.) Analytical foundations of the theory of quasiconformal mappings in  $\mathbb{R}^n$ . 85b:30023
- Brill, D. R. (with Jang, P. S.) The positive energy program. (See 85i:83001)
- Brownowski, Bruno On the continuity of the optimum set in parametric semi-infinite programming. 85c:49051
- Buttazzo, Giuseppe (with Percivale, Danilo) On the approximation of the elastic bounce problem on Riemannian manifolds. 85c:49048
- Donaldson, S. K. An application of gauge theory to four-dimensional topology. 85c:57015
- Fujiwara, Ohtsugu Morse programs: a topological approach to smooth constrained optimization. I. 85b:90050
- Harvey, Reese (with Lawson, H. Blaine, Jr.) Calibrated geometries. 85i:53058
- Hojman, Roberto (with Hojman, Sergio; Scheinbaum, Julio) Shortcut for constructing any Lagrangian from its equations of motion. 85d:49037
- Hojman, Sergio *See Hojman, Roberto*, et al., 85d:49037
- Ioffe, A. D. Necessary conditions in nonsmooth optimization. 85b:49043
- Iwaniec, T. *See Boyarski, Bogdan*, 85b:30023
- Jang, P. S. *See Brill, D. R.*, (85i:83001)
- Kapitanik, L. V. (with Ladyzhenskaya, O. A.) Spherically symmetric solutions of the Euclidean Yang-Mills equations. (Russian. English summary) 85j:81050
- Kasdan, Jerry L. Positive energy in general relativity. 85g:83024
- Ladyzhenskaya, O. A. *See Kapitanik, L. V.*, 85j:81050
- Lawson, H. Blaine, Jr. *See Harvey, Reese*, 85i:53058
- Léauté, B. (with Marilhac, G.) On particular separable solutions of self-dual Yang-Mills equations. 85d:81111
- Marilhac, G. *See Léauté, B.*, 85d:81111
- Maraden, Jerrold E. *See Ball, J. M.*, 85m:49041
- Nill, F. An effective potential for classical Yang-Mills fields as outline for bifurcation on gauge orbit space. 85c:56060
- Percivale, Danilo *See Buttazzo, Giuseppe*, 85c:49048
- Ray, Alak Sufficient conditions for weak minimum of a functional depending on  $n$  functions and their derivatives. 85c:49015
- Scheinbaum, Julio *See Hojman, Roberto*, et al., 85d:49037
- Siegel, Jerrold (with Williams, Frank) Variational invariants of Riemannian manifolds. 85i:55014
- Snyman, I. M. On the transversal distribution and the complete figure in the second order multiple integral problem in the calculus of variations. 85m:49052
- Tomter, P. The spherical Bernstein problem in even dimensions. 85b:53067
- White, Brian Cabell Existence of least-area mappings of  $N$ -dimensional domains. 85c:49063
- Williams, Frank *See Siegel, Jerrold*, 85i:55014

#### 58E17 Pareto optimality, etc., applications to economics

- Calligaris, O. (with Oliva, P.) Semicontinuity of vector functions and existence of the minimum for Pareto problems. (Italian. English summary) 85b:58033
- Hà Huy Vui Sur les points d'optimum de Pareto local de détermination finie ou infinie. [Local Pareto optimum points of finite or infinite determination] 85b:58036
- Oliva, P. *See Calligaris, O.*, 85b:58033

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- Aliprantis, C. D. (with Brown, Donald J.) Equilibria in markets with a Riess space of commodities. 85d:90021
- Brown, Donald J. *See Aliprantis, C. D.*, 85d:90021
- Zak, F. L. Stability of economic equilibrium. (Russian) 85i:90039

#### 58E20 Harmonic maps

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- Baird, Paul ★ Harmonic maps with symmetry, harmonic morphisms and deformations of metrics. 85i:58038
- Baltes, Alfred Stability and uniqueness properties of the equator map from a ball into an ellipsoid. 85a:58021
- Bréals, H. (with Coron, J.-M.) Large solutions for harmonic maps in two dimensions. 85a:58022
- Catenacci, Roberto (with Cornalba, M.; Reina, C.) On the energy spectrum and parameter spaces of classical  $CP^2$  models. 85c:58033
- Chen, Bang-yen (with Nagano, Tadashi) Harmonic metrics, harmonic tensors, and Gauss maps. 85b:58023
- Chen, Xian Ping Harmonic mappings and Gauss mappings. (Chinese) 85i:58039
- Cornalba, M. *See Catenacci, Roberto*, et al., 85c:58033
- Coron, J.-M. *See Bréals, H.*, 85a:58022
- Din, A. M. (with Zakrzewski, W. J.) Some properties of classical solutions in Grassmannian sigma models. 85d:58023
- Eells, J. (with Lemaire, Luc) ★ Selected topics in harmonic maps. 85g:58030  
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(with Lemaire, Luc) Examples of harmonic maps from disks to hemispheres. 85b:58034
- Erdem, S. (with Wood, J. C.) On the construction of harmonic maps into a Grassmannian. 85j:58044  
Harmonic maps from surfaces into pseudo-Riemannian spheres and hyperbolic spaces. 85f:58030  
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- Glazebrook, J. F. Harmonic maps of Riemann surfaces to indefinite complex Grassmannians and the classical domains. 85j:58045  
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- Gu, Chao Hao On the harmonic maps from  $R^{1,1}$  to  $S^{1,1}$ . 85b:58035
- Guest, M. A. Topology of the space of absolute minima of the energy functional. 85b:58047
- Gürses, Metin (with Jantzen, Robert T.; Xanthopoulos, Basilis C.) Harmonic mappings and  $SU(N)$  self-dual Yang-Mills fields. 85i:58041
- Hangan, Théodor Variational problems connected with tensor fields. (Italian. French summary) 85b:58036
- He, Zu Qi A Liouville type theorem on Kähler manifolds. (Chinese) (Not in MR)
- Hu, He Sheng Some nonexistence theorems for massive Yang-Mills fields and harmonic maps. (See 85k:83002)
- Jäger, Willi (with Kaul, Helmut) Rotationally symmetric harmonic maps from a ball into a sphere and the regularity problem for weak solutions of elliptic systems. 85f:58031
- Jantzen, Robert T. *See Gürses, Metin*, et al., 85i:58041
- Jost, Jürgen ★ Harmonic maps between surfaces. 85j:58046  
(with Karcher, Hermann) Almost linear functions and a priori estimates for harmonic maps. (See 85g:53003)
- Karcher, Hermann *See Jost, Jürgen*, (85g:53003)
- Kaul, Helmut *See Jäger, Willi*, 85f:58031
- Kersten, P. H. M. (with Martini, Rodolfo) The harmonic map and Killing fields for self-dual  $SU(3)$  Yang-Mills equations. 85i:58042
- Koufogiorgos, Th. *See Balkousis, Ch.*, 85c:58032
- Langevin, R. Énergies et géométrie intégrale. [Energies and integral geometry] 85b:58048
- Lee, Anna (with Tóth, Gábor) On variation spaces of harmonic maps into spheres. 85j:58047
- Lemaire, Luc *See Eells, J.*, 85b:58034 and 85g:58030
- Leung, Pui Fai A note on stable harmonic maps. 85i:58043
- Martini, Rodolfo *See Kersten, P. H. M.*, 85i:58042
- Milnor, Tilla Klots Harmonic maps and classical surface theory in Minkowski 3-space. 85c:58037
- Min-Oo Maps of minimum energy from compact simply-connected Lie groups. 85m:58056
- Nagano, Tadashi *See Chen, Bang-yen*, 85b:58023
- Parker, Thomas Conformal fields and stability. 85b:58049
- Peng, Jia Gui Some relations between minimal submanifolds and harmonic maps. (Chinese) 85k:58024
- Plushnikov, A. I. Some properties of harmonic mappings in the case of spheres and Lie groups. (Russian) 85d:58024
- Reina, C. *See Catenacci, Roberto*, et al., 85c:58033
- Salamon, S. M. *See Eells, J.*, 85a:58023
- Sasaki, Ryu Local theory of solutions for the complex Grassmannian and  $CP^{N-1}$  sigma models. 85j:58048
- Schoen, Richard (with Uhlenbeck, Karen) Boundary regularity and the Dirichlet problem for harmonic maps. 85b:58037
- Shen, Chun Li A generalization of the Schwarz-Ahlfors lemma to the theory of harmonic maps. 85i:58044

Tachikawa, Atsushi On interior regularity and Liouville's theorem for harmonic mappings. **85e:58038**

Tóth, Gábor Construction des applications harmoniques non rigides d'un tore dans la sphère. [Construction of nonrigid harmonic mappings from a torus into the sphere] **85e:58039**

Flexible harmonic maps into spheres. **85k:58025**

On naturally reductive homogeneous spaces harmonically embedded into spheres. **85h:58050**

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Tyrin, A. V. Critical points of the multidimensional Dirichlet functional. (Russian) **85k:58026**

Uhlenbeck, Karen See Schoen, Richard, **85b:58037**

Wei, S. Walter An average process in the calculus of variations and the stability of harmonic maps. **85a:58024**

Wood, J. C. See Eells, J., **85f:58029** and Erdem, S., **85j:58044**

Xanthopoulos, Basil C. See Gürses, Metin; et al., **85i:58041**

Xin, Yuan Long Some properties of the stress-energy tensor of a smooth mapping. (Chinese) (Not in MR)

Yu, Qi Huang Harmonic mappings and completely geodesic mappings. (Chinese) (Not in MR)

Zakrzewski, W. J. See Din, A. M., **85d:58023**

secondary classifications (58E20)

Anzellotti, Gabriele On the  $c^{1,\alpha}$ -regularity of  $\omega$ -minima of quadratic functionals. (Italian summary) **85f:49016**

Atiyah, M. F. (with Bott, Raoul) The Yang-Mills equations over Riemann surfaces. **85k:14006**

Barbier, Pierre (with Cahen, M.; Gutt, S.) Examples of Yang-Mills fields on Segal's model. **85e:81061**

Bott, Raoul See Atiyah, M. F., **85k:14006**

Cahen, M. See Barbier, Pierre; et al., **85e:81061**

D'Hoker, E. Classical and quantal supersymmetric Liouville theory. **85j:81066**

Gigante, Giuliana Remarks on subharmonic functions on Riemannian manifolds. (Italian summary) **85j:53043**

Gürses, Metin Axially symmetric, static self-dual Yang-Mills and stationary Einstein-gauge field equations. **85g:51155**

Gutt, S. See Barbier, Pierre; et al., **85e:81061**

Henneaux, M. On the inverse problem of the calculus of variations in field theory. **85h:49085**

Hildebrandt, Stefan Nonlinear elliptic systems and harmonic mappings. **85k:35078**

Ishihara, Tōru The Gauss map and nonholomorphic harmonic maps. **85c:53096**

Itoh, Mitsuhiro Geometry of Yang-Mills connections over a Kähler surface. **85i:53034**

Jiang, Guo Ying Harmonic and totally geodesic mappings. (Chinese) **85i:53060**

Kalina, Jerry (with Lawrynów, Julian) Foliations and the generalized complex Monge-Ampère equations. **85i:32025**

Kamber, Frans W. (with Tondeur, Philippe) The index of harmonic foliations on spheres. **85a:57018**

Kohn, Robert V. The method of partial regularity as applied to the Navier-Stokes equations. (See **85g:35005**)

Lawrynów, Julian See Kalina, Jerry, **85i:32025**

Marcellini, Paolo (with Sbordone, Carlo) On the existence of minima of multiple integrals of the calculus of variations. **85a:49008**

Masur, P. O. A global identity for nonlinear  $\sigma$ -models. **85i:81103**

Mok, Ngaiming A survey on complete noncompact Kähler manifolds of positive curvature. **85i:53071**

Münster, Gernot A study of  $CP^{n-1}$  models on the sphere within the  $1/n$  expansion. **85f:81047**

Muto, Yōsio Some properties of isometric minimal immersions of spheres into spheres. **85g:53066**

Sanchez, Norma Connection between the self-dual Yang-Mills and general relativity Einstein equations. **85i:83003**

Sbordone, Carlo See Marcellini, Paolo, **85a:49008**

Simon, L. M. Asymptotics for a class of nonlinear evolution equations, with applications to geometric problems. **85b:58121**

Tondeur, Philippe See Kamber, Frans W., **85a:57018**

Tseitin, M. G. Explicit solutions of the  $O(3)$  and  $O(2,1)$  chiral models and the associated two-dimensional Toda lattice and Ernst equations parametrized by arbitrary functions. (Russian. English summary) **85e:81091**

Tyrin, A. V. The property of absence of local minima in the multidimensional Dirichlet functional. (Russian) **85e:58035**

Xin, Yuan Long Instability theorems of Yang-Mills fields. **85k:53029**

#### 58E25 Applications to control theory (optimal and nonoptimal)

Berenstein, Carlos A. See Krishnaprasad, P. S., **85h:58051**

Krishnaprasad, P. S. (with Berenstein, Carlos A.) On the equilibria of rigid spacecraft with rotors. **85h:58051**

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Belikov, S. A. (with Samborskii, S. N.) Domains of attainability for systems described by partial differential equations. (Russian) **85i:49066**

Kozlov, S. M. Duality of a type of functionals. (Russian) **85g:49041**

Kupka, Ivan A. K. Generic properties of extremals in optimal control problems. **85e:49022**

Kutepov, S. A. (with Yakovenko, G. N.) Group-theoretic aspects of optimal control. (Russian) **85a:49024**

Samborskii, S. N. See Belikov, S. A., **85i:49066**

Yakovenko, G. N. See Kutepov, S. A., **85a:49024**

#### 58E30 Variational principles

Bowman, M. C. A description of E. Weinberg's continuous family of monopoles using the Atiyah-Drinfel'd-Hitchin-Manin-Nahm formalism. **85m:58057**

Dedecker, Paul Existe-t-il, en calcul des variations, un formalisme de Hamilton-Jacobi-E. Cartan pour les intégrales multiples d'ordre supérieur? (English summary) [Does there exist a Hamilton-Jacobi-E. Cartan formalism for higher-order multiple integrals in the calculus of variations?] **85j:58049**

Edelen, Dominic G. B. Operator-valued connections, Lie connections, and gauge field theory. **85m:58058**

Klapka, Lubomír Integrals of motion and semiregular Lepagean forms in higher-order mechanics. **85m:58059**

Krivenkov, Yu. P. Variational principles of theoretical physics in nonfree systems with geometric and kinematic constraints of nonretaining type. (Russian) **85d:58025**

Krupka, Demeter (with Musilová, Jana) Integrals of motion in higher order mechanics and in the theory of fields. (Czech) **85k:58027**

Musilová, Jana See Krupka, Demeter, **85k:58027**

Noriega, R. J. The Klein-Gordon equation and the Euler-Lagrange operator. (Spanish. English summary) **85i:58038**

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An, Ying (with Chen, Shi; Guo, Han Ying) Principal bundles containing an arbitrary scalar function or functional and nonabelian gauge theory. (Chinese) (Not in MR)

Anderson, Ian M. (with Duchamp, T.) Variational principles for second-order quasilinear scalar equations. **85k:35005**

Chen, Shi See An, Ying; et al., (Not in MR)

Duchamp, T. See Anderson, Ian M., **85k:35005**

Frank, V. A. See Semenov-Tyán-Shanák, M. A., **85f:81048**

Guerra, Francesco (with Marra, Rossana) Stochastic mechanics of spin- $\frac{1}{2}$  particles. **85m:81052**

Guo, Han Ying See An, Ying; et al., (Not in MR)

Isham, Christopher J.  $\theta$ -states induced by the diffeomorphism group in canonically quantized gravity. (See **85g:83004**)

Krupka, Demeter (with Štěpánková, Olga) On the Hamilton form in second order calculus of variations. **85m:58064**

Kutepov, S. A. (with Yakovenko, G. N.) Group-theoretic aspects of optimal control. (Russian) **85a:49024**

Leary, J. M. Solutions périodiques de systèmes hamiltoniens sur des surfaces d'énergie étoilées. [Periodic solutions of Hamiltonian systems on starlike energy surfaces] **85i:58046**

(Lin, Chang Shou) See Nirenberg, L., **85h:58035**

Ludvigsen, M. (with Vickers, J. A. G.) Momentum, angular momentum and their quasiloal null surface extensions. **85g:83014**

Mallavin, Paul Calcul des variations stochastiques subordonné au processus de la chaleur. (English summary) [Stochastic calculus of variation on the heat semigroup] **85a:60066**

Mangiarotti, L. (with Modugno, M.) New operators on jet spaces. (French summary) **85h:58005**

Marra, Rossana See Guerra, Francesco, **85m:81052**

May, H.-O. Generalized variational principles and nondifferentiable potentials in analytical mechanics. **85e:70020**

Modugno, M. See Mangiarotti, L., **85h:58005**

Nirenberg, L. Comments on nonlinear problems. **85h:58035**

Nishiyama, Seiya A Jacobi equation on the coset manifold  $SO(2N)/U(N)$  and the quasiparticle RPA equation. **85d:81187**

Olver, Peter Hyper-Jacobians, determinantal ideals and weak solutions to variational problems. **85e:58040**

Pérez-Rendón, Antonio Principles of minimal interaction. **85k:81123**

Semenov-Tyán-Shanák, M. A. (with Frank, V. A.) Variational principle for the Lorents condition and restriction of the domain of path integration in nonabelian gauge theory. (Russian. English summary) **85f:81048**

Štěpánková, Olga See Krupka, Demeter, **85m:58064**

Szapiro, Tomasz The calculus of variations for multiple integrals depending on higher order derivatives. **85m:49053**

Vickers, J. A. G. See Ludvigsen, M., **85g:83014**

Yakovenko, G. N. See Kutepov, S. A., **85a:49024**

#### 58E35 Variational inequalities (global problems)

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Browder, Felix E. Coincidence theorems, minimax theorems, and variational inequalities. **85k:47099**

Hlaváček, Ivan See Nečas, Jindřich, **85f:73088**

Nečas, Jindřich (with Hlaváček, Ivan) Solution of Signorini's contact problem in the deformation theory of plasticity by secant modules method. (Russian and Czech summaries) **85f:73088**

Schwara, Fritz Contact symmetries of the harmonic oscillator. **85a:81042**

Tan, Kok Keong Comparison theorems on minimax inequalities, variational inequalities, and fixed point theorems. **85k:49026**

#### 58E99 None of the above, but in this section

secondary classifications (58E99)

Baumgartner, Bernhard (with Narnhofer, Heide; Thirring, W.) Thomas Fermi limit of Bose-jellium. **85c:82012**



Berger, Melvyn S. Creation and breaking of self-duality symmetry—a modern aspect of calculus of variations. 85b:58003

Brown, Martin Richard Symmetric Hadamard series. 85d:81131

Bunge, Marta (with Heggie, Murray) Synthetic calculus of variations. 85m:18004

Corrigan, E. (with Goddard, P.) Some aspects of instantons. 85d:81097

Di Vecchia, P. (with Rossi, Paolo) On the equivalence between the Wess-Zumino action and the free Fermi theory in two dimensions. 85m:81092

Forgács, P. (with Horváth, Zoltán; Palla, L.) Solution-generating technique for self-dual monopoles. 85g:81111

Goddard, P. See Corrigan, E., 85d:81097

Heggie, Murray See Bunge, Marta, 85m:18004

Horváth, Zoltán See Forgács, P.; et al., 85g:81111

Korpin, V. E. (with Shatah, S. L.) Rational parametrization of three-instanton solutions of Yang-Mills equations. (Russian) 85m:81096

Maraden, Jerrold E. See Sims, J. C., 85g:73002

Minami, Masatsugu On the Polyakov model for a closed string. 85j:81052

Narnhofer, Heide See Baumgartner, Bernhard; et al., 85c:82012

Palla, L. See Forgács, P.; et al., 85g:81111

Rossi, Paolo See Di Vecchia, P., 85m:81092

Semikhatov, A. M. The supersymmetric instanton. 85d:81147

Shatah, S. L. See Korpin, V. E., 85m:81096

Shi, Tian Yi Unitarity violation in a gauge theory with noncompact  $SL(2, C)$  group. (Chinese. English summary) 85f:81049

Sims, J. C. (with Maraden, Jerrold E.) Stress tensors, Riemannian metrics and the alternative descriptions in elasticity. 85f:73002

Thirring, W. See Baumgartner, Bernhard; et al., 85c:82012

Wu, Yong Shi See Zumino, B.; et al., 85m:81120

Zee, A. See Zumino, B.; et al., 85m:81120

Zel'dovich, Ya. B. Topological and percolation properties of potential mapping with gluing. 85g:58002

Zumino, B. (with Wu, Yong Shi; Zee, A.) Chiral anomalies, higher dimensions, and differential geometry. 85m:81120

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### 58Fxx Ordinary differential equations on manifolds; dynamical systems (For abstract and topological dynamics, see also 28D10, 34C35, 34C40, 54H20.)

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(Chudnovsky, G. V.) See Classical and quantum models and arithmetic problems, 85g:58031

Cuckenheimer, John Toolkit for nonlinear dynamics. 85a:58025

Hale, Jack Infinite-dimensional dynamical systems. 85f:58036

Hirsch, Morris W. The dynamical systems approach to differential equations. 85m:58000

Lasford, Oscar E., III Introduction to the mathematical theory of dynamical systems. 85c:58040

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Gallavotti, G. ★ The elements of mechanics. 85g:70001

Cuckenheimer, John (with Holmes, Philip) ★ Nonlinear oscillations, dynamical systems, and bifurcations of vector fields. 85f:58002

Haken, Hermann ★ Synergetics: an introduction. 85c:00030

Holmes, Philip See Cuckenheimer, John, 85f:58002

Thompson, J. M. T. An introduction to nonlinear dynamics. 85g:34001

Zubov, V. I. ★ Аналитическая динамика системы тел. (Russian) [Analytic dynamics of a system of bodies] 85f:70003

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★ Proceedings of the IUTAM-ISIMM symposium on modern developments in analytical mechanics. Vol. II. 85j:58005b

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### 58F05 Hamiltonian and Lagrangian systems; symplectic geometry [See also 70Hxx.]

van der Aa, Els Nongenuine first-order resonance with three degrees of freedom. 85c:58043b

Allouche, Jean-Paul (with Conard, Michel) Une propriété extrême des suites automatiques. [An extremal property of automatic sequences] 85g:58033

Ankiewicz, A. (with Paek, C.) Potential symmetry in dynamics and the onset of chaos. 85h:58028

Astashev, A. M. Normal forms of Hamiltonian operators in field theory. (Russian) 85h:58052

Atiyah, M. F. Angular momentum, convex polyhedra and algebraic geometry. 85a:58027 (with Bott, Raoul) The moment map and equivariant cohomology. 85c:58041

Aubry, Serge (with Le Daeron, P. Y.) The discrete Frenkel-Kontorova model and its extensions. I. Exact results for the ground-states. 85f:58032

Balachandran, A. P. See Zaccaria, F.; et al., 85c:58052

Barducci, A. (with Giachetti, R.; Sorace, E.) An independence theorem for Lagrangian systems on graded manifolds. 85h:58053

Benci, V. (with Capozzi, A.; Fortunato, D.) On asymptotically quadratic Hamiltonian systems. (Not in MR)

Benanti, S. Linear symplectic relations. 85g:58034

Benettin, G. (with Galgani, L.; Giorgilli, A.; Strelcyn, J.-M.) A proof of Kolmogorov's theorem on invariant tori using canonical transformations defined by the Lie method. (Italian and Russian summaries) 85h:58054

Berishvili, G. D. A multidimensional symplectic structure and the space of Lagrange subspaces. (Russian. English and Georgian summaries) 85a:58028

Berkshire, F. H. (with Gibbon, J. D.) Collapse in the  $n$ -dimensional nonlinear Schrödinger equation—a parallel with Sundman's results in the  $N$ -body problem. 85a:58029

Berry, Michael Semiclassical mechanics of regular and irregular motion. 85f:58033

Betounes, David E. Les courants conservés pour des lagrangiens généraux. (English summary) [Conserved currents for general Lagrangians] 85j:58050

Bogoyavlenskii, O. I. Dynamics of a rigid body with  $n$  ellipsoidal cavities filled with a magnetic fluid. (Russian) 85c:58043

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## 58H05 Pseudogroups [See also 22E65.]

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## 58H10 Cohomology of classifying spaces for pseudogroup structures (Spencer, Gelfand-Fuks, etc.)

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## 58H15 Deformations of structures [See also 32Gxx, 58G05.]

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